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ABSTRACT

Based on an 11-month investigation of the Smithsonian Institution Libraries (SIL), this report focuses on preservation problems in the general collections. Brittleness is pinpointed as the most serious problem, and the environmental conditions which exacerbate the deterioration of materials in the collection are discussed. SIL's earlier in this collection are discussed. SIL's earlier programs for preservation treatment and disaster planning are evaluated, and the options for education and preservation methods are considered. A strategy for dealing with the deterioration of the SIL collection is outlined in 37 recommendations which address organization; policies; collection maintenance; staff training; establishment of intercept and emergency action programs; public awareness; funding and fund-raising; and facilities planning, supplies, and equipment. The following related information is included in the appendices: (1) Task Force Membership; (2) Implementation Schedule; (3) SIL Collection Survey and Instructions; (4) Problems--Total Sample and by Location; (5) Walk-Through Environmental Conditions Task Force; (6) Temperature and Relative Humidity Readings; (7) Light Readings; (8) Position Description for Preservation Services Officer; (9) Draft Introduction to an SIL Preservation Policy; and (10) SIL Policies Relating to Preservation. (KM)

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EDITORS NOTES ON THIS PUBLICATION SERIES

This final report is one of ten in a series resulting from libraries conducting the OMS Preservation Planning Program (PPP). A two-year grant from the National Endowment for the Humanities enabled the OMS to select and work with ten Association of Research Libraries members as they conducted the Preservation Planning Program and served as demonstration sites for other libraries in their areas. Applications from interested libraries were screened in Fall 1984, and ten libraries were chosen to conduct PPP self-studies from 1984 to 1986.

The Preservation Planning Program is designed to put self-help tools into the hands of library staff responsible for developing plans and procedures for preserving library materials. A typical library takes from four to six months to complete the Program, which involves the cooperation of 25 to 30 staff members. Using a structured planning procedure, a manual, and an extensive resource notebook, library staff prepare a detailed action plan for local preservation program development for the next three to five years, with the on-site assistance of a librarian-consultant trained by the Office of Management Studies.

Most PPP final reports being with a discussion of the background of the institution and the external factors related to the current preservation situation. Task force reports then provide details on the specific concerns and interests of the individual sites. In a final section, libraries lay out their implementation plans.

Copies of PPP final reports are available for $10.00 each, either through library distributors, or by direct order from the OMS. Prepayment is required, and reports should be ordered by complete title, including library name. OMS Publication order forms are available by writing or calling OMS, 1527 New Hampshire Ave., Washington, D.C. 20036. 202 232-8656.

The Office of Management Studies was established in 1970 by the Association of Research Libraries with financial support from the Council on Library Resources. The Office also has received funding from The Andrew W. Mellon Foundation, The General Electric Foundation, The National Endowment for the Humanities, The Lilly Endowment, inc., and the H.W. Wilson Foundation. The OMS provides self-study, training, and publication programs and services to academic libraries, to assist them with organizational and staff development and strategic planning for change.

SIL PRESERVATION PLANNING PROGRAM

June 4, 1985 - May 1, 1986

FINAL REPORT

of the

STUDY TEAM

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EXECUTIVE SUMMARY

While the Smithsonian developed a number of library collections since its founding in 1847, the Smithsonian Institution Libraries (SIL) was created in in 1965 and placed under the leadership of a single director. The SIL brings together the various libraries and isolated book collections that had matched the growth and separation of the Institution into a diverse set of museums and research bureaus. Its collections have now grown to almost one million volumes. SIL is considered one of the nation's specialized research libraries, with a number of important historical collections in natural history, history of science and technology, anthropology, materials culture, aeronautics, the decorative arts, and African art.

In 1977, the Libraries began a concerted effort to improve its preservation capabilities by establishing a Book Conservation Laboratory (BCL). In addition to restoring SIL's Special Collections, i.e., rare books and manuscripts, the BCL has over the years provided a number of important services toward the preservation of the general collections. Parallel to the establishment of the BCL, SIL increased and improved its commercial binding program and implemented a disaster control program. By FY 1985, expenditures for SIL's preservation activities had reached $368,000 with the equivalent of 9.5 staff members involved. However, during the past decade library and SI staff reported with increasing frequency that books printed from 50 to 100 years ago were becoming impossible to use because of their poor condition.

In 1984, SIL hired preservation consultant Pamela Darling, a faculty member at the Columbia University School of Library Service, whose report suggested that SIL was facing a problem shared by most American research libraries: the widespread deterioration of its general collections. As a first response to this problem, SIL applied to the Association of Research Libraries for assistance and was selected through competition as one of ten research libraries to carry out a self-study process, known as a preservation planning program. In April 1985, the SIL Director appointed a Study Team to carry out the program, with the help again of Pamela Darling. In addition twenty-one staff members formed task forces to investigate specific problems before the program concluded in May 1986. Because of the acknowledged strength of the SIL program in rare book conservation, the Study Team concentrated on planning related to the general working collections.

Physical Condition of the Collection

While the SIL collections contain library materials in a variety of formats, the predominant format is the traditional book or journal. A survey of three representative branches -- National Museum of Natural History (Anthropology), National Museum of American History, National Air and Space Museum -- served to suggest the overall condition of SIL's holdings. Using a sample of 1,088 volumes, the survey team discovered that the most serious and pervasive problem within the SIL general collections is brittleness. Nearly one-third of the books in the sample (30.4 percent) were found to be brittle. Extrapolated to the total SIL collection, over 300,000 volumes may already be too fragile to survive another use.

What causes this condition? In the late 19th century, the transition from plant-fiber-based paper to wood-pulp-based paper, and associated chemical and technological changes in the paper-making process, greatly raised the acid content of book papers, while decreasing their structural flexibility and strength. When acidic papers with these inherent weaknesses are subjected to the effects of time, fluctuating temperature and humidity, and a polluted atmosphere, the papers grow more and more brittle, eventually crumbling and cracking into pieces.

Since acidity combined with poor environment is a major cause of embrittlement, the future of the SIL collections is not very encouraging. The survey showed that over 83 percent of the sample volumes contained acid paper; 69 percent of the total were extremely acidic. The age of the volume is also a factor. The highest percentages of SIL's brittle books were published between 1870 and 1930; over 90 percent of the books in this period were found to be acidic, and most were already brittle. Yet the publications from that time period continue to be extremely important to curators and are often requested for purchase.

Brittleness cannot be reversed. Only very expensive, time-consuming restoration, usually involving page-by-page treatments such as lamination, can rescue the original volume. Replacement of the text, often with a more stable medium such as microform, is usually the most cost-effective option.

Brittleness was one of several serious problems uncovered. Others can also lead to loss of text. To correct them is not a simple matter, but unless the affected volumes are also brittle, they can usually be rebound or repaired. The following table shows these problems in descending order:

Most Serious Physical Problems

Problem	% of sample	Extrapolated to SIL Collection
Brittleness	30.4%	304,000
Red Rot (destroys leather bindings)	6.6	66,000
Detached/covers	2.8	28,000
Detached pages	2.7	27,000
Pages stuck together	2.6	26,000
Missing spines	.9	9,000
Missing covers	.6	6,000
Mold/mildew	.2	2,000

Environmental Conditions

SIL collections are dispersed in 36 recognized locations in at least 14 different branches, stretching as far north as Cambridge, Mass., and as far south as Panama. Temperature, humidity, and light level data were gathered for six representative sites and added to existing data from non-Washington locations. Additional data from all branches concerning physical structures for storage was also collected.

For paper-based materials, national standards call for an ideal temperature of 65° F. +/- 5° F and relative humidity of 45-55 percent, with a minimum of six air changes per hour. Frequent fluctuations of temperature and humidity levels are extremely harmful to library materials. None of the spaces surveyed met these standards. Moreover, there were many readings that showed temperatures significantly above the ideal range for an entire week (sometimes close to 80° F.), as well as consistently higher humidity levels or extreme fluctuations. Light is measured in watts lumen, and standards call for a maximum level of 75 watts lumen from either natural or artifical light sources for spaces containing paper materials. Fifteen out of twenty-four readings registered over 75 watts lumen, with the highest readings in stack areas near windows. Few lighting fixtures have ultraviolet filters, nor are such filters routinely installed on windows. Book bindings in a number of collections show evidence of fading and discoloration; these are signs of oxidation, which leads to brittleness and loss of text. The environmental survey also revealed other conditions, such as the presence of dust and debris, and occasional problems of pest control and severe overcrowding of shelves.

High temperature, humidity and light levels increase the rate at which a book becomes brittle. In 1981, a study conducted by Herbert S. Bailey of the Princeton University Press showed that the rate of deterioration of book paper halves with each drop of 10°C in temperature. Because the SIL is in a tenant relationship within all other Smithsonian bureaus, however, the environmental problems are difficult to solve. The scattering of SIL collections among multiple buildings forces the Libraries to take a realistic view of what can reasonably be accomplished to improve environmental conditions. There is no doubt that such improvement would have the highest impact on the longevity of the collections as a whole.

Disaster Control in the SIL

The review of SIL's existing disaster control program revealed a sound basis for expansion. Disaster kits were available in many locations and had been used to combat several water emergencies. Staff had been trained, although staff turnover and reassignments showed that training efforts should be renewed. The review uncovered a number of conditions at several sites that have caused emergencies in the past or could lead to future problems. Some of these were corrected before the planning program was completed. SIL needs to reactivate its disaster control program and provide a more consistent administrative structure to seek ways of avoiding emergencies, as well as to plan for quick responses.

Preservation Methods

SIL is not alone in its concern for the condition of its collections.

Preservation has become a leading issue among research institutions, and there are a number of groups working on standards, policies, and projects that have nationwide significance. SIL can use and adapt standards and policies developed by others. There are a growing number of cooperative preservation projects covering categories of deteriorating material that will help to narrow SIL's program focus. SIL can choose as its priorities books and journals not covered in projects elsewhere.

In looking at the best methods for preserving its general collections, the study looked primarily at techniques for replacement and reformatting, and at the new processes for mass deacidification. The study did not include an examination of optical disk technology, since another SIL working group was exploring that possibility.

For books with acid paper that is not yet brittle, a low-cost, mass deacidification process would be the most effective way to ensure the longevity of SIL collections. Two processes in active development in North America are the Library of Congress diethyl zinc gas phase process and the Wei T'o liquid system, which uses magnesium carbonate. However, both are still experimental, and there are no reliable cost estimates for either system. It is not likely that SIL would have access to this kind of technology in the near term, although progress should be carefully monitored.

For brittle books, the only cost-effective alternative is to replace the volume with a newer edition or reprint, or to transfer the intellectual contents to another, more stable medium, such as microform, which has a long, enduring life. Microform also can save substantial amounts of space and is most suitable for materials that are not heavily used. But microforms are not suitable for every type of publication, especially those with color illustrations, or those with plates that must be compared with physical specimens, for example.

There is consensus among the branch staff that for the present, microform will continue to be the most likely reformatting technology for use in a brittle book replacement program.

Organization for Preservation

The study reviewed SIL's present organizational structure for carrying out preservation functions and compared it to a listing of the core elements of a comprehensive preservation program. The following listing identifies those elements. Clearly, conservation of special collections and commercial binding represent strong program components. Those on the list marked with an asterisk are currently receiving less coordinated attention.

*1. Identification/screening of damaged/deteriorated items (carried out routinely for Special Collections only) -- FY 1985 expenditure: Minimal.

*2. Protective maintenance (not neglected, but primary attention given to Special Collections) -- FY 1985 expenditure: $56,941

*3. Minor repair -- FY 1985 expenditure: $3,019.

4. Conservation treatment/restoration (consumes 29 percent of expenditure; represents major strength) -- FY 1985 expenditure: $104,765

*5. Replacement/reformat -- FY 1985 expenditure: $2,636.

6. Commercial binding (consumes 44 percent of expenditure; represents major strength) -- FY 1985 expenditure: $167,316

*7. Preservation training -- FY 1985 expenditure: $2,129.

8. Administration (adequate for services now performed) -- FY 1985 expenditure: $30,982.

To add or expand the components marked above will require additional staff and budget allocations or a decision to reallocate resources from other SIL programs.

RECOMMENDATIONS

SIL took an important first step toward consolidating its preservation program in the creation of the Collections Management Division in the early 1980s. The Division, headed by an Assistant Director, brings together all the functions of materials selection, acquisition, collection maintenance, and preservation. This provides clear administrative responsibility for preservation within SIL management and unites the activity with selection and replacement functions. Thus the stage is already set for SIL to put into place a comprehensive preservation program.

The following 37 recommendations range from very simple but effective actions to the implementation of new program components. All will serve to increase the longevity of SIL collections. Obviously, not all can be implemented at the same time. Some require additional staff and fiscal resources, which will take time to develop, while others will require a realignment of priorities. The Study Team recommends a phased approach to implementation and has included a three-year timetable in the final report. The recommendations can serve as objectives for the next several years.

The recommendations are not ranked on a single scale of importance, but instead are grouped in logical, functional combinations. Because those dealing with organizational structure are critical to the way in which the rest of the recommendations are carried out, they are offered first.

A. Organization

Implementing the recommendations on organization will at a miminum create within the Collections Management Division a unit for replacement and reformatting of the large number of brittle books in the SIL collections. Adopting other recommendations establishes the capacity to coordinate more effectively the preservation activities and policies directed toward the Libraries' general, working collections.

1. Create a Preservation Services unit in the Collections Management Division, staffed by preservation officer and one support person.

2. Establish a replacement/reformatting unit within the Preservation Services unit of the Collections Management Division.

3. Develop a master policy on the replacement of library materials.

4. Reconstitute the SIL Preservation Committee with broader representation from branches and processing units.

5. Reactivate the Special Committee on Microforms.

B. Policies

These recommendations refer to SIL's general policy structure and the need to increase the visibility of preservation policies within it. Policies that cover specific program components are included in those sets of recommendations.

1. Develop a comprehensive preservation policy that outlines the SIL philosophy toward preservation and sets the priorities for implementing preservation practices.

2. Review all existing and proposed policies to incorporate preservation concerns.

3. Bind and catalog one complete set of the SIL Preservation Planning Program background study, task force reports, and final report, and place in the Central Reference collection.

C. Collections Maintenance

Improvements in the ways that SIL staff maintain the collections will have a high impact on their continued availability. In most cases, the direct cost is small. Success depends rather on changes in behavior and on constant staff awareness of how collections should be handled.

1. Develop a system-wide policy and procedures for collections maintenance.

2. Arrange to have the books and shelves cleaned at the same time as projects planned for shifting collections or barcoding books.

3. Maintain all equipment in good working order.

4. Install ultraviolet filters on all fluorescent lighting in SIL units.

5. Instruct staff to turn off lights in stacks and other areas not in use.

D. Staff Training

Staff training within the SIL generally has been carried out on an ad hoc basis. A much more systematic program is required. All staff need to be

concerned with and active participants in preservation of the collections.

1. Develop and implement a systematic program of instruction, aimed at all SIL staff, on the proper care and handling of books, beginning with an orientation program for new staff.

2. Alert staff to external training opportunities in preservation, as appropriate.

E. Intercept Program

The dispersion of SIL collections requires a variety of techniques for identifying specific volumes that require preservation treatment. A program is needed to ensure that each branch has the means of identifying the most important candidates, which are often those in active circulation.

1. Initiate an intercept program in the branches to identify material in need of preservation treatment at the point of circulation and to take corrective action.

F. Libraries Emergency Action Program (LEAP)

The review of SIL's Disaster Control Program showed a need to change its emphasis and strengthen its administrative structure.

1. Establish a standing Emergency Action Team of three permanent and three rotating members to administer the SIL Emergency Action Plan.

2. Finalize the Emergency Action Plan and present to OPCON.

3. Prepare Emergency Information (Prompt) sheets and Salvage Instructions in final form and distribute to appropriate SIL staff.

4. Train members of the Emergency Action Team and unit volunteers; provide refresher courses on an annual basis.

5. Increase the number of Emergency Kits and attach scissors to the bottom of each kit for easy opening.

6. Establish an emergency response fund in the SIL spending plan.

G. Public Awareness

SIL must develop support for preservation among its user population if it is to succeed in its requests for increased financial support. In addition, users can help prevent further damage to the collections if they are made aware of how their own practices can be improved.

1. Educate users on the care and handling of books and the use of microform equipment.

2. Publicize results of SIL planning program to develop support among SI staff and administration.

H. Funding and Fund-Raising

Persistence in budget requests and a more active posture toward fundraising is required if SIL is to obtain the fiscal resources needed for program enhancement. The Institution's management must also be convinced that preservation of the SIL collections is an institutional priority.

1. Establish a replacement program budget in the SIL spending plan, using existing funds.

2. Present resource needs for preservation in every budget submission; apply for all possible grants from within the Institution (e.g., Women's Committee of the Smithsonian Associates) for specific preservation projects.

3. Actively seek funds from private, external sources.

I. Facilities Planning, Supplies, and Equipment

This set of recommendations specifically responds to the problems associated with the environmental conditions prevailing in the diverse buildings in which SIL collections are housed. Fundamental to SIL's ability to effect any substantial improvements is close, persistent, and aggressive liaison with all buildings managers and space planners.

1. Open lines of communication immediately with the SI Office of Design and Construction on facility planning, renovation, and plans to upgrade HVA/C systems.

2. Establish a means of periodic fumigation of all library locations.

3. Develop guidelines for facilities maintenance and establish close communication and liaison with all building managers.

4. Publicize the availability of conservation-related supplies, such as acid-free envelopes, paper tapes for securing microform reels, twill tape for securing damaged books, etc.

5. Determine preservation implications of all new equipment or new stocks of supplies before purchase.

6. Increase visibility of pull-out shelves in stack areas.

7. As soon as the cleaning responsibility is clearly assigned to branch personnel, supply branches with vacuum cleaners and cleaning supplies, with a stock kept of those that are consumable.

8. Upgrade microform reader/printers and add units as necessary.

9. Install timer switches in all possible stack areas.

10. Add a top shelf as a "cap" to all shelving possible in all branches.

INTRODUCTION

The Smithsonian Institution Libraries (SIL) has its origin in the Act of Congress that established the Institution in 1846. The Act provided for the "gradual formation of a library, composed of valuable works pertaining to all departments of knowledge." In the Institution's plan of organization, approved by its Board of Regents in 1847, resources were to be apportioned to research and publication, to the formation of a library, and to collecting objects of nature and art. Following a major fire in the Smithsonian Building in 1865, however, the main portion of the library collections was transferred to the Library of Congress, where it was maintained as a separate unit, known as the Smithsonian Deposit, until 1953, when it was integrated into the Library of Congress collections.

Meanwhile, in 1881, the Smithsonian founded the United States National Museum Library. This collection grew and divided as the museum system expanded. In 1965, the Institution created a system of libraries, renamed the Smithsonian Institution Libraries, under the leadership of a single library director. By 1985, the SIL collections approached one million volumes.

The SIL began specifically to address its preservation needs in 1977, when it established a Book Conservation Laboratory and charged it with arresting and reversing the deterioration of the Libraries' most valuable and rare manuscripts, books, and journals. But just walking through the stacks over the last few years, SIL staff have become increasingly aware of the deteriorating condition of much of the Libraries' general collections. Surveys of historical collections in other research libraries began to produce startling accounts of the growing brittleness and fragility of works less than 100 years old. The BCL was asked to provide a number of important services to improve handling and care of the general collections but the nature of much of the Institution's historical research, and especially its continuing reliance on 19th- and early 20th-century materials, underscored a growing feeling on the part of the SIL administration that a more comprehensive preservation approach was needed.

In 1984, the SIL administration hired Pamela Darling, a faculty member at the Columbia University School of Library Service, to produce a quick overview of the state of the SIL collections. That report confirmed the observations of Libraries staff: not only is there severe deterioration in the general collections, but there exists potential for even more disastrous loss. With this knowledge, Assistant Director for Collections Management, Nancy E. Gwinn, applied to the Association of Research Libraries (ARL) for assistance. SIL was selected through a competitive process as one of ten research libraries, all ARL members, to carry out a preservation planning self-study program with the aid of a trained consultant, a manual, and other materials prepared by the association. Pamela Darling was once again selected as consultant. In April 1985, Robert Maloy, Director of the Smithsonian Institution Libraries, appointed a Study Team to carry out a Preservation Planning Program for the SIL. The goal of the study was to provide to the SIL Director a framework and recommendations for the establishment of a comprehensive preservation program for the S.I. Libraries.

The Charge

The Study Team was charged to:

1. Develop a plan for the preservation of the SIL collections, which includes recommendations for:

   a. organizational responsibility for preservation activities;

   b. general guidelines for selecting items to be preserved and for assigning preservation priorities;

   c. methods and costs for preservation of various parts of the collections;

   d. improvements in environmental conditions;

   e. changes in processing and use practices by staff and patrons;

   f. improvements, if needed, in the SIL disaster control program.

2. Determine the role of the SIL program within the evolving national plan for cooperative preservation programs;

3. Establish priorities for the most efficient use of current fiscal resources, as well as priorities for allocating additional resources as they become available.

The Process

The study was carried out in three phases. First, the Study Team prepared a background report, which described the institutional context within which a program must fit, the current organization of the SIL and its resources, and the evolution of preservation activities within the Libraries. In the second phase, five task forces were appointed to assess the physical condition of the SIL's dispersed collections; to assess the environmental conditions under which the collections are used and stored; to examine the SIL program for handling emergencies; to identify and evaluate preservation techniques and staff training requirements; and to propose the optimal organizational structure for carrying out preservation activities at the SIL. Approximately twenty-seven staff members served on the task forces, which concluded their investigations in February 1986. (See Appendix 1 for task force membership). Finally, the Study Team reviewed and evaluated all of the task force reports and recommendations and prepared its final report. The Study Team completed its work in May 1986.

Planning Assumptions

In its preliminary investigations, the Study Team developed several planning assumptions that provided parameters for the task force investigations. In analyzing the results, the Study Team tested those assumptions and found that they are still valid and continue to form a context for the recommendations contained here. They are:

1. The S.I. Libraries must build and preserve its research collections for continued use by present and future Smithsonian researchers.

2. The SIL collections will continue to deteriorate, in some cases at a rapid rate, unless SIL can expand its present efforts.

3. Increased preservation efforts are contingent on available funds and staffing and must be competitive with other program initiatives throughout the Institution.

4. The Libraries will continue to be geographically dispersed to meet the research needs of the Institution.

5 There is strong preference among SIL staff, and often a legitimate need, to retain books in hard copy, because of the nature of the research and its reliance on illustrated resources (e.g., taxonomy, decorative arts, material culture) and the Institution-wide emphasis on exhibits.

6. There should be a phased approach to developing a more comprehensive preservation program for the S.I. Libraries.

The task force reports contain much valuable information in greater detail than can be reproduced here. Their analysis and documents supplement this final report and will provide further guidance as the program is implemented. What follows are summaries and highlights of the task force investigations.

PHYSICAL CONDITION OF THE COLLECTIONS

Books have three basic physical elements: a paper "body," or text block; a binding holding the paper together; and an external cover for protection. Most books published since 1800 are not considered rare or intrinsically valuable; nonetheless, they are worth preserving for their intellectual content; the paper text block is therefore the most important book element. It is also, unfortunately, the element most obviously and seriously deteriorating in books today.

It is now generally recognized that the transition in the mid-1800s from plant-fiber-based paper to wood-pulp-based paper, and associated chemical and technological changes in the paper-making process, greatly raised the acid content of book papers, while decreasing their structural flexibility and strength. This combination of factors is the major cause of deterioration, specifically paper embrittlement, in modern books.

Other physical conditions (e.g., loss of covers, spine damage, the presence of mold or mildew) can lead to the deterioration or destruction of the text block as well.

While the SIL collections contain library materials in a variety of formats, the predominant format is the traditional book or journal. SIL estimates its collection size to be just under one million volumes. The task force on physical condition of the collections set out to determine the overall condition of these materials by conducting a survey.

The Survey

The geographic dispersion of the SIL collections in over thirty locations, each with its own stack configuration, made it impossible in the time available to consider surveying every site, or to consider a statistically-generated tagging system to sample the whole collection. Consequently, the task force selected three representative collections of varying age and mix of materials, as follows:

1. Anthropology collection, one of the largest and oldest within the National Museum of Natural History Branch (65,000 volumes);

2. National Museum of American History Branch, both main library and storage area (136,000 volumes);

3. National Air and Space Museum Branch, a generally newer collection (42,000 volumes).

The task force selected a sample for the survey that consisted of .5 percent of each collection. The statistical validity of this was confirmed by an SIL statistician. Three teams of two members each received training from the Book Conservation Laboratory staff and gathered data on the 1,088-volume statistical sample.

The task force devised a single-sided, check-sheet-style survey form (see Appendix 3 for sample form and instruction sheet) to record the types of materials and the presence of problems, if any. The information gathered consisted of the following:

1. Type of-materials (kinds of paper, covers, casings used and presence of special elements like plates, tissue guards, etc.).

2. Type of binding.

3. Date and place of publication.

4. Shelving problem (leaning, on fore-edge, etc).

5. Existing physical damage to binding or paper.

6. Presence of alien materials (e.g. tape, paperclips) in the books.

7. Acidity and brittleness of the paper.

8. Location and call number of each book.

The data was aggregated in a two-step process: an outside contractor was hired to keypunch the data and produce a computor tape, which was then processed with the Statistical Package for the Social Sciences (SPSS) by the SI Office of Information Resources Management. This yielded the statistics and correlations of data that formed the basis of the survey results.

The Results

SIL collections as a whole are heavily used, so it is not surprising to find that the survey uncovered a substantial amount of damaged material. The task force ranked the problems on a scale of one to four. The third and fourth levels are problems that require active, immediate attention if the volumes and/or their contents are to remain as usable parts of the collection.

Problems at level four consist of conditions in which living organisms (mold, mildew, insects) are attacking the books, and there is danger of further contamination throughout the collection. Fortunately, the surveyors found little evidence of this condition. Once staff are trained to spot these organic infestations, they can be quickly contained.

Problems at level three are the most serious, for they can result in the actual or potential destruction of the intellectual content of the book, which is contained in the text block. Of these, the most serious and pervasive problem within SIL collections is brittleness.

The degree of brittleness in paper is a measure of its internal, structural strength and flexibility and determines whether a book can be rebound or retained in its original form. It is measured by bending a corner of a page back and forth up to four times; if the corner breaks off, the paper is too brittle to withstand use. In fact, if that book were to be placed flat on a photocopy machine, the entire page would probably break off at the spine. The task force found nearly one-third (30.4 percent) of the sample to be brittle and more than half of those with pages that could not survive a single fold. Extrapolated to the entire SIL collection, this would come to over 300,000 volumes that are already in too poor a condition to use without danger of text loss.

TABLE 1

Materials and Problems - Brittleness
(by percentage of sample)

	Total %	1 fold	2 folds	3 folds	4 folds
Total sample(N=1088)	30%	16%	6%	5%	3%
By type of material:					
Matte paper (N=675)	27	17	4	4	2
Glossy paper (N=274)	28	13	6	5	3
Matte/glossy (N=105)	43	17	14	8	4
By condition:					
Acidity-mild	5	2	2	0	1
-extreme	38	22	7	6	3
Binding problems	23	39	11	3	5

Brittleness cannot be reversed. If a book is rare or costly, brittle paper can be reinforced using expensive, time-consuming processes, such as page-by-page lamination or encapsulation. For most materials, the only cost-effective way to retain them in the collection is to replace them with newer editions or reprints, if available, or transfer the contents to another medium, such as microform. In fact, if the book is too brittle, it cannot even be filmed.

Nor is the future very encouraging. Brittleness is caused by a combination of acid in the paper, aggravated by poor environmental conditions and age. All of the books in the sample were surface PH tested with the use of an acid indicator pen. Sixty-nine percent had an extremely high acid content, with over 83 percent containing some level of acidity.

TABLE 2

Paper Material and Problems - Acidity

	Mildly acidic	Extremely acidic
Total (N=1088)	14%	69%
Matte (N=675)	12	77
Glossy (N=274)	23	41
Paper prob. (N=578)	9	80

Age is an obvious factor if the acidity and brittleness results are correlated with the date of publication of the books.

TABLE 3

Date of Publication - Acidity and Brittleness

	Total sample (N=1088)	Mild acidity	Extreme acidity	Any acidity	Brittle
1810-39	1%	13%	80%	93%	31%
1840-69	5	7	91	98	45
1870-99	13	4	91	95	72
1900-29	21	7	86	93	55
1930-59	23	14	68	82	23
1960-85	37	24	48	72	3

Acidity is present at very high levels in books printed from the early 1800s to the present time. Brittleness becomes prevalent in books published in the latter half of the 19th century and, increasingly, in the early part of this century. Restricting the use of a book will not by itself slow the march of deterioration. Over 3 percent of the sample consisted of books with uncut pages -- assumed to have been little used -- and 97 percent of these were extremely acidic, with over half of them also brittle. Clearly it is only a matter of time, unless steps are taken, before many volumes published only recently will also reach a point where they can neither be rescued nor used.

While brittleness is the single most serious problem, others cannot be ignored, for they also can lead to loss of text. To correct them is not a simple matter, but, unless the books are also brittle, they can usually be rebound or repaired. The following table shows these problems in descending order of significance:

TABLE 4

Most Serious Physical Problems

Problem	% of sample	Extrapolated to SIL collection	Level of seriousness
Brittleness	30.4%	304,000	3
Red Rot (destroys leather bindings)	6.6	66,000	3
Detached covers	2.8	28,000	2
Detached pages	2.7	27,000	3
Pages stuck together	2.6	26,000	3
Missing spines	.9	9,000	2/3
Missing covers	.6	6,000	3
Mold/mildew	.2	2,000	4

The first and second-level problems that were also uncovered are not to be discounted, but they can probably be corrected with improvements in shelving maintenance and other care and handling practices. Appendix 4 includes a chart of all problems discovered in the survey.

Conclusion

The evidence from the survey makes obvious the need for SIL to escalate its binding and repair program and to redirect and develop a coordinated program for replacing brittle books. Acquisition and interlibrary loan policies and improvements in environmental controls are needed to make sure that SIL does not inadvertently aggravate the problem.

Additional staff must be devoted to the preservation of SIL's general collections if SIL is to continue to carry out its responsibility to make information available to future Smithsonian researchers.

ENVIRONMENTAL CONDITIONS

SIL collections are dispersed in 36 designated locations in 14 different branches. Each location varies greatly in age and condition, the buildings ranging in date of construction from the 1800s to the present decade. The building management unit in each host museum/facility is responsible for climate control, repairs, renovations and daily general maintenance of the

respective locations. The SIL does not directly control any of the spaces in which library materials are housed. In all cases, including the separate library building at STRI, we are tenants in museum structures.

Based on the assumption that the SIL will remain physically dispersed to meet the Institution's research needs, the Task Force on Environmental Conditions was charged with 1) producing an inventory of the current environmental conditions (including temperature, humidity, air quality and physical structures for storage) in which collections are stored and used; 2) identifying any gaps in current environmental information gathering; 3) comparing SIL with generally accepted standards and practices of other institutions; 4) identifying specific problems with SIL environmental conditions; and 5) developing recommendations on methods to correct them.

The Survey

The task force chose to examine six branch locations that represented what was perceived to be the best, the worst, and the average environments in which SIL collections are housed. Chosen sites were the National Air and Space Museum (NASM) branch; the National Museum of American History (NMAH) branch and its periodicals storage area; the Anthropology, Botany and Hall 22 collections within the National Museum of Natural History (NMNH) branch; and the Research Annex (SILRA) at 1111 N. Capitol St. Further, the task force decided to review all locations outside of Washington, D C., by sending a survey form to branch chiefs. The survey form appears as Appendix 5.

Certain data could not be gathered by means of the survey form. An ultraviolet (UV) light monitor was used to spot check the intensity of ultraviolet radiation from internal and external sources. Temperature and relative humidity readings were taken from hygrothermographs placed at various sites. The task force also interviewed two building managers. All data was then gathered into charts for interpretation.

The results of the survey highlight the fact that environmental problems do not exist in isolation. The relationships of size of space and age of building, stack placement, quality of air handling systems, and availability of library staff for collections maintenance were all kept in mind when evaluating the data and developing recommendations.

The Results

Branch library sites range in size from 2,904 square feet to 17,600 square feet with a mid-range for most of 3,000 to 5,000 square feet. These figures do not reveal complexities caused by architectural variations at each site. The NASM branch, split into two large areas, has separate environmental conditions with one heating, ventilation and air conditioning (HVAC) system doing double duty. NMAH and Anthropology are two-room branches as well. NMNH Hall 22, formerly museum exhibit space that has been and will be used temporarily (two to four years) by SIL for storage, is a dark room with high ceilings and no heat. The NMAH periodicals storage room is similar to Hall 22. SILRA is unairconditioned warehouse space rented by the Institution.

Heating, Ventilation and Air-Conditioning

National HVAC standards call for an ideal temperature of 65°F. +/5°F. for paper-based materials; relative humidity should fall within limits of 45-55 percent, with a minimum of six air changes per hour. Air handling should include minimal atmospheric dust filtration to remove 80-85 percent of 1 micron (the millionth part of a meter) particles and 50 percent of particles between 0.5-1 micron, plus filtration to remove other pollutants including sulphur dioxide, sulphuric acid and ozone. At present none of the spaces surveyed meet those standards for acceptably controlled environments. Fluctuations in relative humidity and temperature continue to accelerate the deterioration of library materials. The results from all locations are so varied that it is impossible to generalize on the worst case.

Environments are controlled by the Smithsonian's OPLANTS division and not by SIL or its individual librarians, who must repeatedly call for corrections or improvements. Out of a total of 83 hygrothermograph chart readings, 53 had temperature readings significantly above the ideal range (60°F.70°F.) for an entire week or for a portion of the week. Some of those temperatures were close to 80°F. For y-one charts had humidity readings above the ideal range consistently or, even worse, moving in and out of the range in severe fluctuations (see Appendix 6 for representative hygrothermograph charts).

Light

Research has established that paper materials should not receive levels of lighting higher than 75 watts lumen, from either natural or artificial light sources. Of the locations surveyed, light sources ranged from the ten floor-to-ceiling windows and skylights at NASM, to a total absence of direct natural light in Hall 22 and the NMAH periodicals area. All sites had fluorescent lighting. None are effectively UV-filtered. Book bindings in collections housed in Anthropology, Botany, SILRA and STRI show evidence of fading and discoloration, evidence that oxidation is taking place and will quickly affect the paper as well. Fifteen out of twenty-four readings taken in the surveyed sites registered over 75 watts lumen with the highest readings in stack areas near windows (see Appendix 7 for light readings).

Shelving

In addition to looking at the environmental conditions, the task force evaluated the housing of materials by looking at SIL's use of shelving, folders and boxes, exhibit cases, book trucks and work surfaces. On the whole, SIL shelving was found to be in good condition and arranged with adequate aisle space. In 70 percent of the sites surveyed, however, overcrowding of shelves was identified as a significant problem. Due to the overall lack of space for library stack growth, books were piled horizontally on top of items shelved upright. In over half of the sites, the shelves were too tall for the convenient or safe handling of books. Books are literally shelved from floor to ceiling in many locations. As a result, items on top shelves are too close to air vents and lights and items on lower shelves are exposed to water during floor cleaning.

Folders and boxes are being used as protective enclosures at 80 percent of the locations surveyed. The task force noted some deterioration of the material used for enclosures and also some indication of damage done to materials that were improperly housed.

Other Library Equipment

The site study revealed that SIL exhibit cases conform to national standards, in part because most of the cases reside in the best environmentally controlled locations. Examination of book trucks and work surfaces indicated that some branches lacked an adequate number of trucks for safely transporting library materials, and that work surfaces in several locations, especially at SILRA and the Cooper-Hewitt Museum branch, were inadequate.

Collections Maintenance

The final element to be examined in the environmental condition of SIL locations was collections maintenance. The survey included information on cleaning schedules, on inspection of library materials for dust, mold, and insects, and on the frequency of fumigation.

Over half the sites surveyed received routine cleaning by building personnel, while two were cleaned irregularly and two were never cleaned. Books and shelving do not receive regular cleaning at any location. Four sites reported evidence of vermin. Only four sites had established schedules of pest control. Overall housekeeping to eliminate dust and debris is a haphazard affair with improvement in cleaning practices needed at all branches. As the SIL does not have its own maintenance staff, general cleaning and pest control must be arranged through the building managers' offices and therefore often falls out of their priorities. Unfortunately, SIL is not able easily to spare library technical staff to perform routine shelf maintenance. The Libraries has no janitorial staff.

Conclusion

The scattering of SIL collections forces the Libraries to take a realistic view of what can reasonably be accomplished to improve environmental conditions. Without a library building with its own maintenance crew, SIL must ensure that its voice is heard in all deliberations to improve/change systems within the many buildings in which branches are located, and to call constantly for service and assistance when needed. The problem of overcrowded stacks may be more amenable to solution, and SIL can also take steps to assure use of more stable enclosures and book trucks, better shelving practices, and suitable work surfaces. Controlling light is another area where SIL can effect improvements.

DISASTER CONTROL IN THE SIL

The charge to the Task Force on Disaster Planning was to review the SIL "draft" disaster plan, prepared in 1979 by the SIL Disaster Committee (the first written plan within the Smithsonian), and to recommend changes as needed. The task force also reviewed SIL's history of emergencies and

conducted site visits to several locations where there have been continuing problems. These inspections included the Anthropology and Vertebrate Paleontology sublocations in NMNH, the periodicals storage area in NMAH, Horticulture, the Museum Reference Center, the Jewett Room, SILRA, and SERC-Edgewater. In addition, the task force identified persons within the Institution who were concerned with emergency preparedness and collected relevant documents from both Institutional and external sources.

To give itself a framework within which to function, the task force enumerated three basic assumptions:

1. That SIL is in a tenant relationship in all of its locations;

2. That each museum or bureau has its own procedures plan for handling disasters and that as a tenant, SIL must abide by the instructions and orders administered by the respective building authorities;

3. That the SIL emergency plan will not cover plans for human emergencies, since these are adequately handled by buildings managers.

The Results

The task force uncovered a number of conditions that have caused emergencies in the past or could lead to future problems. Some, such as unstable shelving, or the proposed return of the Horticulture collection to an unsafe location, were corrected before the study was completed. Others, such as lack of sprinklers, are beyond the control of the SIL, but are slowly being addressed by the Institution. There are a number of chronic conditions resulting from building construction, such as the leaks in the NMAH periodicals storage area caused by the terrace overhead, that require constant vigilance to avoid an emergency.

The task force concluded that the SIL built a good foundation for a disaster program, recommended to be renamed the Libraries Emergency Action Program (LEAP), in the late 1970s. Thanks to the efforts of the SIL Book Conservation Laboratory staff, SIL personnel were trained in emergency procedures; emergency kits were at hand -- and were used -- in many locations; a number of emergencies, mostly water-related, had been successfully handled in recent years. However, the reactive nature of the program made it difficult to sustain the momentum. Staff turnovers and reassignments further affected progress. Within a year of the initial training, only a few staff members remained who were fully prepared to handle emergency situations. Refresher courses have not been given.

The task force found that facilities maintenance is the key to avoiding emergency situations. Coordination with building managers must be constant, with SIL playing an active, preventive role as well as equipping itself to respond to emergencies should it be necessary. The balance of the task force's work was devoted to revising the existing disaster plan, upgrading the resource lists, and recommending a new administrative structure that would embody the concept of both preventive action and response.

PRESERVATION METHODS AND TRAINING RESOURCES

SIL is not alone in its concern for the condition of its collections. Preservation has become a leading issue among research institutions, both in North America and Western Europe. SIL can benefit from what other institutions are learning and producing. It was the charge to the Task Force on Preservation Methods and Training Resources to learn what was available to the SIL and how this would influence its preservation program.

The SIL Role in National Planning

There are a number of groups working on standards, policies, and projects that have nationwide significance. The Library of Congress (through its National Preservation Program), the National Endowment for the Humanities (NEH), the American Library Association (ALA), the Council on Library Resources, and the groups working under the umbrella of the American National Standards Institute, are all players in a growing national preservation strategy. Existing standards for binding, microfilming, and permanent paper help SIL's program in direct and indirect ways. Binding standards are part of SIL's binding contracts with commercial firms; microfilming standards ensure the quality of microfilms purchased from vendors and guide SIL's own microfilming policies.

While SIL is ineligible for grants from government agencies, the new NEH Preservation Office is supporting cooperative preservation microfilming projects among groups of institutions. These target specific categories of deteriorating books and journals that will help to narrow SIL's program focus: SIL will be able to choose for its priorities materials not covered in projects elsewhere and thus contribute to the pool of preserved resources nationwide.

ALA and other nonprofit organizations are beginning to offer a variety of training workshops, programs, and seminars on preservation topics, in which SIL staff can participate. It will require constant attention to keep in touch with these developments, however, for there is no single national entity that coordinates preservation.

The SIL has an important role to play in these developments, given that its collections are rich in the history of science and technology. If resources are available, SIL could assume a responsibility for preserving specific classes of material within these fields.. Some of SIL's prominent collections, such as its large trade catalog collection, are unique national research resources.

Preservation Methods

It was not the task force's role to determine which of SIL's general collections to preserve, but rather to concentrate on the best methods for doing so. The group acknowledged that there was no need to review restoration methods for Special Collections, because SIL's Book Conservation Laboratory operates at the highest standards utilizing accepted procedures. Accordingly, the task force looked at techniques for preserving the general

collections. They did not explore optical disk technology, since another SIL working group charged with this task completed a report in April 1986. Instead their efforts concentrated on techniques for replacement and reformatting, and at new techniques for mass deacidification.

Replacement

A fully developed replacement program for SIL must be guided by an acquisition policy that considers a number of factors: the presence in the collection of duplicates and their condition; use patterns (frequency, recency, etc.); relevance to the collection; and cost (including withdrawal of old volumes, searching for and processing the replacement). The availability of a hard-copy replacement, whether a reprint or new edition, is also a factor. For a large number of brittle books, the only choice will be replacement with a microform.

Microfilm

The microfilming program of the SIL has been plagued by a small budget, problems in quality control, and lack of staff. SIL has written procedures that detail how microfilming is to be performed once an item has been selected, but there is no systematic procedure for selecting suitable candidates. In the 1970s, some volumes were microfilmed for SIL by vendors who did not perform to standards; at present all SIL filming is performed at the Library of Congress under contract.

Even before knowing the results of the physical condition survey, the task force found that branch librarians agreed that there is a need to convert some materials to microform. There is a decided preference among branch staff for microfiche over roll microfilm. However, there is great resistance to replacing illustrated materials with film of either kind. If a publication is used primarily for browsing, or needs constantly to be compared at the same time with another publication or object, microform may not be the suitable choice.

As a result of discussions with other institutions that administer microfilming programs, the task force came to the conclusion that it would be too expensive for SIL to set up a filming laboratory in house. SIL should continue to contract for services from an external filming agent, using carefully developed contracts. The Library of Congress produces quality microfilm, but it is expensive. Perhaps another filming agent could be nurtured, if the quantity of work were sufficiently attractive. Preparation of materials for filming and inspection of returned films can also be contracted out, if SIL lacks staff to perform these functions. The National Agricultural Library and the National Library of Medicine report good results with the services of local contractors for this function.

Before undertaking itself to have a publication microfilmed, SIL should attempt to purchase film copies from outside commercial or nonprofit sources. SIL should also consider the possibility of a cooperative effort with a commercial micropublisher, if collections with market appeal can be delineated.

A micropublisher would normally assume the cost of filming, with SIL receiving a royalty on sales.

If SIL decides to increase its microfilming activity, it will be necessary to lease storage space in a facility that meets archival storage requirements. Most likely this will be in a remote location. Preservation master negatives (the original camera film) are currently housed in the same location as service copies, contrary to accepted practice. SIL will also have to decide whether to have printing masters (duplicate master negatives used to generate user copies) prepared in addition to the preservation master negatives and user copies required. This will depend on the expected demand for copies of the items filmed. SIL will need to improve its procedures for bibliographic control of microforms as well. To move master negatives from their current locations will require a review of all microforms cataloged thus far, separate cataloging of master negatives, and assignment of storage numbers. Currently, master negatives are not given a high priority for cataloging and are not clearly distinguished from service copies.

Mass Deacidification

The Task Force looked carefully into the possibility of mass deacidification for SIL collections. If such a process were available, it might extend two to five times the potential life of paper at relatively low cost per volume. The process would slow deterioration of brittle books, but it would not restore paper strength.

There are no mass deacidification processes that can be purchased and applied easily. Two processes in active development are the Library of Congress diethyl zinc gas phase process and the Wei T'o liquid system, which uses magnesium carbonate. It is reported that the Bibliotheque Nationale is about to experiment with a liquid phase system using freon and tethanol. Although the Wei T'o process has been running in a demonstration program at the Public Archives of Canada for a number of years, there are no installations in the United States. The Library of Congress program has suffered a setback because of engineering problems, resulting in the chemical igniting. There are no reliable cost estimates for either system. It does not appear likely that SIL would have access to this technology in the near term, although progress should be carefully and continually monitored. The physical conditions survey noted that even newly published works are acid (72 percent of those published from 1960-1985). Clearly, if SIL acquisitions could routinely be deacidified, the future growth of the brittleness problem would significantly contained.

Training Resources

Preservation training in the SIL has been sporadic and inconsistent. The Chief Conservator has carried out special training sessions on how to respond to disasters and what to look for when assessing the preservation requirements of specific volumes. There have been sporadic films and seminars. The "ad hoc" nature of preservation training is not surprising, since, without a staff development officer, most of SIL's training is carried out in this manner.

SIL is fortunate to be planning for staff training in preservation at a time when there are an increasing number of published materials to consult, model programs to emulate, external educational opportunities to attend, and expert conservators and preservation administrators to call upon for advice and instruction. The task force collected many examples of these materials and pointed specifically to the ARL SPEC kit on "Preservation Education in ARL Libraries" as a rich resource for all kinds of training materials that SIL could adapt or use. By drawing on these sources, SIL could construct a systematic training program that would function almost automatically as part of other routine activities. The responsibility for such a training program should also be a duty of a full-time, SIL preservation officer, if resources can be found to hire such a person. Without this centralized driving force, training is likely to continue to be scattered and inconsistent.

Components of a training program would range from such activities as in-house instruction of new staff and refresher sessions for others on how to photocopy and shelve books properly to alerting appropriate staff to external courses and arranging for staff to attend workshops like those sponsored by the American Library Association, the Library of Congress, the Northeast Document Conservation Center, and other organizations. Other activities should include preparation of exhibits and posters, development of a handbook on preservation-related procedures, and periodic programs at the SIL semi-annual meetings.

Users of SIL collections also need attention. A well-trained staff who handle books and other library materials carefully and properly will set a good example for library users, but posters, bookmarks, and other public awareness activities could also play a role. Developing appropriate publicity materials and making sure every branch receives and uses them requires coordination and energy.

ORGANIZATIONAL RESPONSIBILITY FOR PRESERVATION

The study team asked the Task Force on Organizational Responsibility for Preservation to identify current SIL preservation activities, identify any problems with the organization of these activities, examine the organization of preservation activities in other libraries that have active preservation programs, and recommend necessary changes to the organization of preservation activities at SIL.

The first step was to identify all of the preservation activities currently taking place within the SIL. Through personal and telephone interviews, estimates were gathered on level of staff, staff time, and budget devoted to a variety of activities, ranging from housekeeping to fine binding. Once the data were gathered and quantified, the Task Force was able to discern deficiencies and pinpoint gaps.

As a second step, the Task Force reviewed all of SIL's present policies and pointed out strengths and weaknesses. Finally, the group outlined a possible new organizational structure that would consolidate

preservation practices and provide a mechanism for initiating new program components.

Current Activities and Expenditures

Although many staff members devote a portion of their time to preservation-related activities, the Task Force concluded that in FY 1985 the amount of time spent amounted to 9.5 full-time equivalent (FTE) staff. The SIL spent approximately $368,000 for preservation in FY 1985. By far the majority of the funds was spent on conservation of special collections (29 percent) and commercial binding (44 percent). This leaves one-fourth of SIL's present preservation budget for all other activities, including replacement of brittle or damaged materials. This imbalance is further clarified in the following review of current activities.

The activities were grouped into eight categories, which constitute the core elements of a comprehensive preservation program. These elements were derived from Pamela Darling's 1984 consultancy report ("Saving the Record: A Report on Preserving the Collections of the Smithsonian Institution Libraries") and from an examination of preservation programs in other institutions that are considered models.

1. IDENTIFICATION/SCREENING OF DAMAGED/DETERIORATED ITEMS
(FTE: Minimal; BUDGET: Minimal)

Identifying and screening materials that need preservation includes: (a) locating volumes that appear to require some kind of treatment or replacement; (b) deciding what should be done with these items; (c) if some preservation function is to be performed, deciding whether it should be done in-house or by an outside organization; (d) if physical treatment is to be performed, deciding what that treatment should be; (e) if replacement or reproduction is chosen, deciding whether to replace or reproduce, what format format of replacement or reproduction to use, and what to do with the original item afterwards.

This category also covers all searching activities, such as searching within the SIL collections for information on other editions or related works, for existing preservation microforms, and outside the institution for other replacement copies.

Identification and selection of materials for treatment occurs rarely in the branches. At present, a routine identification and screening process is in effect only in Special Collections. Branch staff are uncertain about what options are available for preservation or replacement of nonrare volumes or of working copies of rare items, and how to proceed to make any decision beyond rebinding or putting an item into an envelope or other protective enclosure.

2. PROTECTIVE MAINTENANCE (FTE: 2.94; BUDGET: $56,941)

Protective maintenance includes activities that will add to the longevity of the collection as a whole (with the exception of commercial binding), such as routine cleaning and shelf maintenance, protective wrapping or boxing, disaster control, exhibit consultations, packing and shipping, etc.

Although they are not being neglected, these activities receive considerably less systematic attention than needed and are split between the Book Conservation Laboratory and the branches. Again, the most consistant attention is given to Special Collections. The BCL staff has assisted as best they can, with advice and help in providing protective enclosures, monitoring the environment, and making sure appropriate conservation materials are used. This work has devolved on the BCL by default and detracts from the restoration work that is their primary function.

3. MINOR REPAIR (FTE: 0.13; BUDGET: $3,019)

Minor repair includes mending (pages, spines and corners, tipping in pages, etc.) books that do not require rebinding and is intended to extend their useful life without returning them to their original condition.

BCL staff perform a very small amount of this mending work either in their laboratory or in the Binding Purchasing unit. Branch staff lacking an organized mechanism for handling volumes in need of repair. Because branch staff are limited in numbers, the SIL Director has prohibitewd minor repair activity in the branches.

4. CONSERVATION TREATMENT/RESTORATION (FTE: 3.55; BUDGET: $104,765)

Restoration and conservation treatment consists of all fine binding and restoration work performed on rare or valuable items. It covers procedures intended to return materials to their original condition or to a condition approximating that state.

This work is restricted to volumes having artifactual value and is performed by the BCL or through contract with external conservators. It can be considered a major strength and represents 29 percent of the preservation budget. However, it is concentrated on a small and not heavily used portion of the SIL collection, which is generally well protected and housed.

5. REPLACEMENT/REFORMAT (FTE: 0.09; BUDGET: $2,636)

Replacement decisions are primarily directed at volumes of continued research value, which are so brittle or severely damaged that a decision is made to replace them with copies whose life expectancy is anticipated to be significantly greater. It includes purchase of replacements when available, transfer of the contents through photocopying or preservation microfilming, and coordination of bibliographic control measures.

There are neither established SIL guidelines on how to select items for replacement options, nor sufficient staff time devoted to coordination and administration of a replacement program. Without guidelines or a specific program budget, activity has been minimal. Acquisitions Services has handled the microfilming of a few special items, and a number of journal backfiles have been replaced with films.

In addition, SIL is not following standard practices for cataloging and storing master negatives, nor are there policies to govern all aspects of SIL's microform collections. Lack of routine, concentraterd attention to brittle materials and microform collections is a serious deficiency in SIL's preservation program.

6. COMMERCIAL BINDING (FTE: 2.08; BUDGET: $167,316)

Commercial binding includes the preparation and receipt of items to be sent to a commercial contract binder and receipt and quality control of items returned by the binder.

This is SIL's principal preservation activity for the general collections, representing 44 percent of the preservation budget. It includes binding of serials and new paperbacks as well as older monographs forwarded from the branches for binding or rebinding. Binding preparation can be considered for contracting out, thereby making staff in both the branches and the Binding Purchasing unit available for other preservation activities.

7. EDUCATION (FTE: 0.07; BUDGET: $2,129)

Preservation education encompasses on-the-job training and formal education, such as seminars, workshops, and film programs on various preservation issues and procedures. It also involves promoting preservation awareness among all library users.

There has been little formal activity, and there are no related policies with the exception of the draft disaster plan. The employee orientation package will include information on care and handling of volumes. Branch supervisors' performance plans already contain elements regarding training of subordinates.

8. ADMINISTRATION (FTE: .60; BUDGET: $30,982)

Administration refers to program development formulation, contract development, budget preparation, staff supervision, and program evaluation.

To support a comprehensive preservation program in an institution the size and complexity of SIL, two levels of management are required. The Assistant Director for Collections Management provides general direction, oversight, policy formulation, and budget development. Program supervision and development and implementation of procedures should be delegated to middle-level professional staff. Identifying, selecting, reviewing, and determining preservation treatments -- and then carrying out those treatments -- is as labor intensive for general collections as restoration work is for special collections. SIL already has units to handle conservation of the Special Collections and commercial binding. Significant preservation program expansion to the general collections will occur only with an additional administrative position in the Collections Management Division.

To achieve a better balance between restoration of special collections and preservation of the general, working collections, the Task Force considered five new organizational structures. The Study Team reviewed the options and presented in its recommendations below the one thought to promise the greatest success.

RECOMMENDATIONS

The 37 recommendations that conclude this document range from very simple but effective actions to the implementation of new programs requiring staff and substantial budgets. All would increase the longevity of SIL collections. Obviously, not all recommendations could be carried out simultaneously, but they may serve as goals for the SIL preservation program for some years to come. As a guideline for implementation planning, the Study Team has developed a three-year timetable (see Appendix 2).

While all of the measures are important, the Study Team feels one recommendation has a clear priority, established by the unanimity among task force reports on the physical conditions of the collections and the best preservation methods available. SIL must begin an active replacement program that includes an increased amount of preservation microfilming. This is a complex, labor-intensive task that responds to SIL's most critical problem: brittle and severely damaged books and journals. The preservation replacement program requires staff to physically identify, handle, and make decisions about individual volumes. With a potential 300,000 volumes in danger, this workload cannot be handled by any existing unit in the SIL. Because such a program requires handling and decision-making on each individual volume, a full-time professional position with some support from existing staff will be required to design and implement a program to make inroads into this serious problem.

Further review of the task force reports clearly indicated other functions for a full-time staff member. A preservation officer would be expected to organize and assist preservation activities in all branches and processing units (other than Special Collections) and to act as a catalyst to ensure consistent attention to preservation questions and support for commercial binding and replacement options. While SIL could improve its practices and procedures on an ad hoc basis to provide some protection and minimal preservation for its general collections without additional staff, the remedy provided is analogous to applying band-aids to a large flesh wound. After reviewing all the recommendations, if the SIL administration couples the replacement program with other protective maintenance activities designed to retard deterioration, and with centralized coordination of staff and user education, then the establishment of a preservation services unit seems critical.

The Study Team believes that a single person cannot do everything. Preservation awareness must permeate the thinking of all SIL staff -- and of users of its collections, as well. This preservation study itself has been a training device that has gone a long way toward raising the awareness of SIL staff at all levels. The appointment of a preservation officer would solidify those gains and ensure that the program would continue its momentum. These recommendations then form the agenda for that individual.

The recommendations are grouped in logical categories. Following each recommendation is an indication as to whom that recommendation might be referred, a suggested timetable, costs, where known and "see also" references to related recommendations. An implementation schedule (Appendix 2) reorganizes the recommendations by fiscal year.

A. Organization -- Recommendations

The recommended organization of SIL for preservation would at a minimum create a program to respond to the threatened loss of the large number of brittle books in the collections. Depending on the level and number of staff involved, it would also establish the capacity to coordinate more effectively the preservation activities of all branches and processing units.

A1. Create a Preservation Services unit in the Collections Management Division, staffed by a preservation officer and one support person.

Given the SIL's decentralization and the complexity and dispersal of preservation activities, it is strongly recommended that a preservation officer be appointed and the Collections Management Division be reorganized to create a Preservation Services unit. This unit would parallel Acquisitions Services and the Book Conservation Laboratory and would encompass the functions of commercial binding, replacement or reformatting, and coordination of preservation activities in the branches and processing units. The BCL would continue to be responsible for restoration of special collections. The preservation officer would also supervise an expansion of minor repair work, staff training program, and preservation awareness activities for users. (See Appendix 8 for a description for this position).

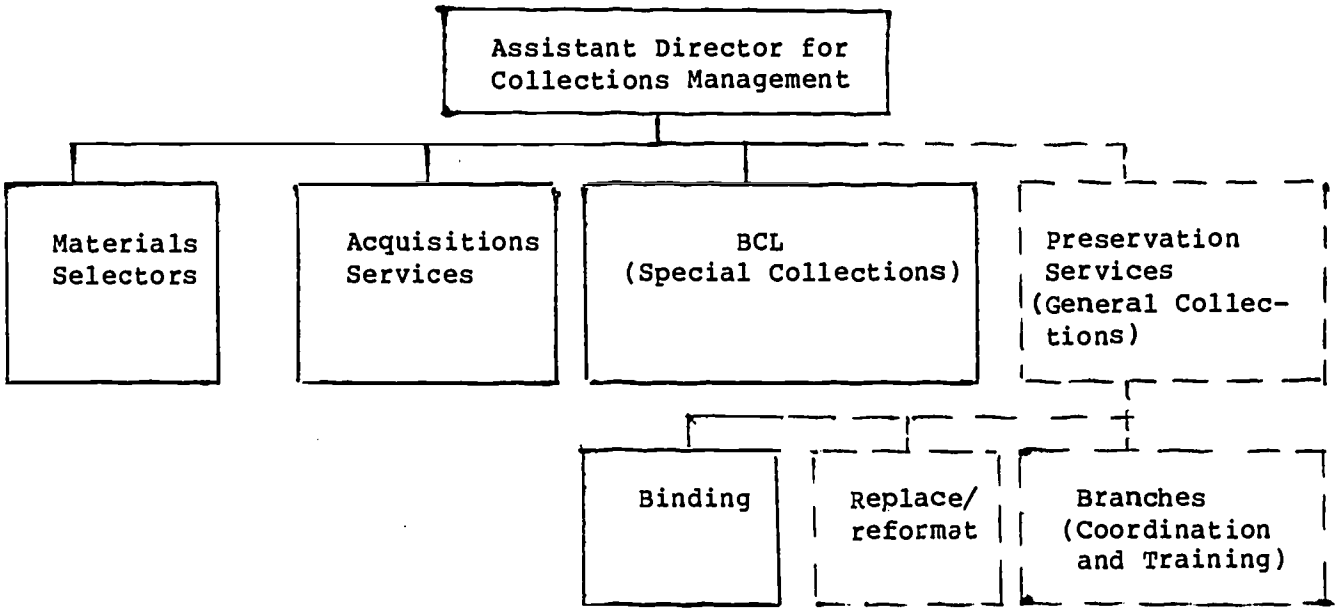
In addition, it is essential that SIL maintain contact with national and international library preservation planning efforts. SIL should participate in regional programs in the Washington area, as well. This can be coordinated through the Preservation Services unit. The unit will also serve as a resource for emerging preservation technologies and methods for handling nonrare library materials in all formats.

(NOTE: If lack of funding precludes a new hire, it is suggested that someone from the staff be reassigned to establish just the replacement/reformatting unit.)

REFER TO: EXCON
TIME: FY 87

COST: Salary: GS/IS 11
and transfer of a
GS/IS 5/7 technician

If this recommendation is followed, the new organization chart for the collections might appear as follows (dotted line shows proposed units or organization):



A2. Establish a replacement/reformatting unit within the Preservation Services unit of the Collections Management Division.

This unit would be responsible for the following tasks:

- developing policies and procedures for identifying and screening deteriorated/damaged materials and coordinating decisions for preservation treatment, replacement, or withdrawal;
- preparing materials for preservation microfilming;
- inspecting microfilm and ensuring quality of product;
- preparing acquisition requests for replacements to be purchased.

If it is not possible to hire a preservation officer, as an interim step, this replacement/reformatting unit should be established with a staff member at the GS/IS-9 level to report directly to the Assistant Director, Collections Management.

REFER TO: EXCON
TIME: FY 1987

COST: Salary: Transfer or hire GS/IS 5/7 to support preservation officer

A3. Develop a master policy on the replacement of library materials.

This policy should place the responsibility for replacement within the organizational framework of the SIL. It must include decision factors on when to repair rather than replace and how to arrange for the replacement of missing pages. If replacement is chosen, guidelines should be provided on whether to add a copy, purchase a reprint, or purchase/produce a microformatted version. In addition, a formula for the development of comparative cost figures and the consideration of space constraints should be outlined.

REFER TO: Assistant Director, Collections Management
COST: None
TIME: FY 1987
SEE ALSO: Policies, No B2

A4. Reconstitute the SIL Preservation Committee.

The committee should include broader representation from the branches and processing units to take advantage of the training provided by the planning program. The first assignment should be to draft a comprehensive preservation policy for the SIL (See Appendix 9 for draft introduction to policy). Once in place, the preservation officer would serve as chair of the committee.

REFER TO: EXCON
COST: Staff time
TIME: FY 1987
SEE ALSO: Policies, No. B2

A5. Reactivate the Special Committee on Microforms.

This committee was established just prior to the start of the preservation planning program, and its work was postponed. EXCON should reactivate this committee and review its membership in light of the knowledge and experience gained by participants in the planning program. The proposed Preservation officer would also serve if appointed before the committee completes its work. The committee should develop an SIL microforms policy that covers the selection, acquisition, cataloging, housing, and storage of microforms, including commercially produced titles and those produced by the SIL. Procedures should be developed that will allow SIL to make use of bibliographic records for films produced by other institutions and to contribute appropriate SIL records. The committee should also develop guidelines for selection of microform equipment, both reader/printers and storage units.

REFER TO: EXCON
COST: Staff Time
TIME: FY 1987 and ongoing
SEE ALSO: Policies, No. B2

B. Policies -- Recommendations

In all of the task force reports there were clearly defined needs for either new or revised policies on many aspects of preservation. While SIL has a number of policies dealing with current efforts both to preserve collections and to treat individual items, the gaps in these written policies were uncovered during the review of the environmental and physical conditions of the collections, the existing disaster plans, the present organization of preservation efforts and in the planning for methods and training required for preservation of the general collection. The following recommendations refer to broadly based policies. Recommendations for policies referring to specific activities or programs appear in other sections.

B1. Develop a comprehensive preservation policy that outlines the SIL philosophy toward preservation and sets the priorities for implementing preservation practices.

The policy should cover preservation activities related to all formats contained in the SIL collections and should codify or replace existing policies. It would not contain detailed procedures but would point to documents where those will be found. A draft introduction to the master preservation policy is attached (Appendix 9).

REFER TO: Assistant Director, Collections Management; (Preservation Officer)
COST: Staff time
TIME: FY 1987
SEE ALSO: Organization, No. A4

B2. Review all existing and proposed policies to incorporate preservation concerns.

The current SIL policies that relate to preservation are listed in Appendix 10. The Loan Policy(SIL 84-19) needs to be revised to prohibit the lending of books with detached or missing covers, missing spine covers, and brittle pages. Further, brittle books should not be photocopied in lieu of lending the original. The policy on Microfilms of SIL Materials(SIL 84-05) needs to be updated. The Assistant Director, Collections Management should include guidelines in the new gift policy for what types of materials should be accepted as gifts (e.g., no poor quality leather-bound sets, brittle or damaged materials) where this is possible. The branch collection development policies should include a statement on preferred formats, such as: In the process of selection, the most desirable format is the hard bound rather than the paper bound book; contemporary reprint editions or microformats are preferable for books published prior to 1930. Paper copies produced from microform (e.g., University Microfilms Reprint-On-Demand Service) will not be purchased if microformat is available.)

REFER TO : Assistant Director, Collections Management
COST: Staff time
TIME: FY 1987 and on
SEE ALSO: Organization, No. A4

B3. Bind and catalog one complete set of the SIL Preservation Planning Program background studies, task force, reports and final report and place in the Central Library collection.

There is much valuable information and documentation in the task force reports in terms of a description of the state of the Libraries in 1986. While a set will be maintained in the offices of the SIL Director and the Assistant Director for Collections Management, placing a copy in the permanent collection will ensure that it will be available to all staff for continuing consultation as needed.

REFER TO: Assistant Director for Collections Management COST: $30.00
TIME: FY 1987

C. Collection Maintenance -- Recommendations

Both the physical condition and environmental conditions task forces noted problems in stack areas that contribute to the deterioration of library materials. While buildings managers include SIL branches and processing units on their cleaning schedules, sporadically, the work does not extend to the books or shelves. Responsibility for stack maintenance and for keeping books clean must rest with individual unit staffs. SIL practices can be much improved in this area without great cost, but with great benefit to the collections.

C1. Develop a systemwide policy and procedures for collection maintenance.

Regular cleaning responsibilities should be assigned to staff in each branch and outlined in performance plans. Training sessions, perhaps as part of general training on care and handling of books, should cover such topics as correct methods of cleaning stacks (top down), vacuuming, etc. Branch and processing unit chiefs should work with building managers to ensure that the unit is included in regular cleaning schedules. Work surfaces in all SIL units should be kept free of clutter and debris.

REFER: Assistant Directors for Research and Collections Management Services (Preservation Officer)
TIME: FY 1988
COST: Staff time
SEE ALSO: Supplies and Equipment, No. I4

C2. Arrange to have the books and shelves cleaned at the same time as projects planned for shifting collections or barcoding books.

When the barcoding team begins its work, train them to wipe off dusty books and clean shelves as they go. This will result in a systematic cleaning of the entire collection, and make on-going maintenance easier. Staff should also be trained to clean shelves and books whenever collections are shifted within branches or to new locations.

REFER TO: Deputy Director/All Unit Chiefs/ Special Projects (ABC)
TIME: FY 1987
COST: Staff time

C3. Maintain all equipment in good working order.

Branches and other SIL units should assign a staff member the responsibility for preventive maintenance of equipment (e.g., microform readers, typewriters, cleaning equipment, etc.). The equipment should be checked/checked/cleaned on a regular schedule and branches should be supplied with appropriate cleaning kits. User instruction sheets should be attached to or near equipment.

REFER TO: All Unit Chiefs/Administrative Librarian
TIME: FY 1987
Cost: Staff time; cleaning supplies

C4.Install UV filters on all fluorescent lighting in SIL units.

SIL purchased UV filters in FY 85 in sufficient quantity to cover light fixtures in most units. Having them installed involves a much larger amount of OPLANTS hours than SIL is assigned in a single year. This work will have to be phased over several years. In addition, once the filters are installed, they need to be transferred to new bulbs whenever the bulb is replaced. It will have to be the responsibility of all unit chiefs to remind custodial staff to save the filters when changing bulbs. They would be assisted in this if SIL provided stickers on the lighting units that call attention to the presence of filters. Once the initial installation takes place, a supply of fixtures should be stored in each branch.

REFER TO: Administrative Librarian/ All SIL Units
COST: OPLANTS hours and stickers
TIME: FY 1987 - 1990

C5.Instruct staff to turn off lights in stacks and other areas not in use.

Light is a factor in the deterioration of paper. Due to space problems, SIL stacks have been extended above six feet, which brings books at the top close to light fixtures. Installing UV filters will help. But larger branches should identify stack areas where lights can be turned off when not in use or reduced, if infrequently used. This could also provide energy savings.

REFER TO: All Unit Chiefs
COST: Minimal
TIME: FY 1987
SEE ALSO: Staff Training, No. D1

D. Staff Training -- Recommendations

The need for staff training permeated almost every task force report, ranging from specific training for staff who would have new responsibilities to general awareness training on the part of all staff, as well as users. Training recommendations appear under most of the other recommendation categories. In this section are proposals for improving the general level of preservation training within the SIL.

D1. Develop and implement a systematic program of instruction, aimed at all SIL staff, on the proper care and handling of books.

Beginning with their general orientation, all SIL staff should receive specific instruction on how to handle library materials properly, including shelving techniques, how to photocopy without damage, when not to photocopy, how to use book trucks appropriately, turning off lights, guidelines on food and drink, smoking, etc., how to recognize damaged or deteriorated materials, and what to do with them. Films or other training tools should be used. Refresher courses would include a visit to the Book Conservation Laboratory. Following development of the preservation training segment, all staff currently on board should attend to ensure that SIL is working in common toward its preservation goals. Supervisors should be instructed to watch for and correct poor handling practices and processing procedures to ensure that all staff receive the orientation training.

REFER TO: Personnel Committee/
All Units Chiefs
(Preservation Officer)

COST: Staff Time

TIME: FY 1988

SEE ALSO: Intercept Program, No. I1;
Collections Maintenance, No.C1

D2. Alert staff to external training opportunities in preservation.

Information about the availability of preservation training opportunities should be circulated to appropriate SIL staff. There are many preservation courses, workshops, seminars, and meetings that take place in the Washington area. Professional organizations, such as the American Library Association or the American Institute for Conservation, frequently hold such sessions when meeting on the East Coast. Local universities offer courses through their library schools or museum studies programs. OPCON should ensure that an SIL representative is sent to the most important meetings, no matter the location.

REFER TO: Assistant Director
Collections Management
(Preservation Officer)

COST: Depends on program

TIME: FY 1987

E. Intercept Program -- Recommendations

Several of the task force reports pointed to problems of recognizing materials in need of preservation, insuring that those materials receive treatment, and preventing further damage due to improper handling practices. To meet these needs the SIL will have to establish an "intercept" point in the processing or circulation of materials for review of their condition.

E1. Initiate an intercept program in the branches.

The purpose of an intercept program is to identify material in need of preservation treatment or minor repairs. The SIL will need to train staff members, probably those at the circulation desk, to recognize brittle paper, mold and mildew and other preservation problems. Those materials will then be forwarded to the proposed preservation services unit for treatment. The intercept staff member in each branch will also be responsible for inserting warning bookmarks in fragile or brittle items, removing paper clips and extraneous material from books, cleaning books before returning them to the collections, removing material from defective containers and replacing it in protective enclosures and, after training, doing some minor repairs for loose pages or tears.

REFER TO: OPCON/EXCON (Preservation Officer)

COSTS: staff time, archival quality materials, training

TIME:: FY 1989 and ongoing

SEE ALSO: Staff Training No. D1

F. Libraries Emergency Action Program -- Recommendations

The Task Force on Disaster Planning's review pointed clearly to the need to refocus the SIL's already considerable efforts in this area. What is needed is not only the continuing capacity to respond to emergencies, but a means of uncovering problem areas and pursuing preventive activities. The S.I. Libraries Emergency Action Program (LEAP) should be proactive, not entirely reactive.

F1. Establish a standing Emergency Action Team of three permanent and three rotating members.

The permanent members will be the Administrative Librarian as Chair, the Chief Conservator, and the Chief of Catalog Records. The three rotating members will each serve a staggered two-year term. If SIL should hire a preservation officer, that person would also be a permanent member of the team.

Most of the recommendations that follow are subsumed under this one, for the team provides the capacity to pursue other needed objectives. The relative duties of the team members are outlined in the draft Emergency Action Plan, which is attached as Appendix 11. In broad outline, the duties of the team are as follows:

a. Administer the SIL Emergency Action Plan.

b. Provide for selection and training of emergency volunteers.

c. Assemble and maintain a comprehensive master manual and log of emergencies; develop all emergency-related materials.

d. Take action on specific problems identified by the Task Force.

e. Establish a regular schedule of site visits to identify conditions that might provoke an emergency.

REFER TO: EXCON
TIME: FY 1987
COST: Staff time
SEE ALSO: Facilities, No. I3

F2. Finalize the Emergency Action Plan and present to OPCON.

This should be the first charge to the Emergency Action Team.

REFER TO: Emergency Action Team
TIME: Immediately on appointment
COST: Staff Time

F3. Prepare Emergency Information (Prompt) Sheets and Salvage Instructions in final form.

These documents are needed immediately and do not have to await finalization or approval of the new Emergency Action Plan.

REFER TO: Emergency Action Team COST: Minimal
TIME: Immediately upon appointment

F4. Train members of the Emergency Action Team and unit volunteers; provide refresher sessions on an annual basis.

REFER TO: Chief Conservator COST: Staff time
TIME: Within three months of appointment of team

F5. Increase the number of Emergency Kits and attach scissors to the bottom of each kit for easy opening.

The Emergency Kits have proved their usefulness in several emergencies in the past 18 months. There are an insufficient number of kits, however. Kits should be installed in the Rare Book Cataloging Room (or in PAO), Acquisitions Services, the NMAH periodicals storage area, and all NMNH sublocations.

REFER TO: OPCON (funds) and Chief Conservator COST: $2,500
TIME: FY 1989

F6. Establish an emergency response fund in the SIL spending plan.

There is no provision in the current SIL spending plan for funds to meet emergency repair or restoration needs. While the SIL would call upon the Institution for assistance in a major disaster, smaller problems or response to potential emergencies is limited by the availability of funds allocated in the SIL spending plan. The SIL should establish a small subfund in the federal building services line or add a building services line to the trust side to allow for minor improvements (rewiring, wrapping of pipes, etc.), which are discovered in the course of routine safety and emergency action reviews.

REFER TO: EXCON COST: $2,000
TIME: FY 1988

G. Public Awareness -- Recommendations

SIL can do much to increase the longevity of its collections by improving the way its own staff handles and cares for the collections. But they represent only one factor in the equation. The SI researcher, curator, visiting fellow, or administrator who uses the collections can also help the SIL cause, if he or she is made aware of the issues. In SIL's case, this is especially important because much of the collection is located in staff or department offices and not directly supervised by SIL staff on a daily basis. The task forces on training resources and disaster planning made special note of the need to educate users as well as ourselves.

G1. Educate users on the care and handling of books and the use of microform equipment.

The Task Force on Preservation Methods and Training Resources located posters and other materials that could be used in branches as reminders to both SIL staff and users. Posters strategically placed near photocopiers, for example, would serve to both inform and remind users of preservation concerns. Other posters could remind users of such "don'ts" as improper shelving, or the use of pressure sensitive slips and adhesive tape. Acid-free bookmarks could also be used as a tool to stress aspects of preventive maintenance. Branch chiefs, working together, should devise instructional sheets appropriate to their microform reading equipment and attach them to (or place them near) the machine.

REFER TO: Preservation Committee (Preservation Officer)
COST: Purchase or printing of materials
TIME: FY 1987

G2. Publicize results of SIL planning program to develop support among SI staff and administration.

The data collected by the task forces present a powerful case for an expansion of SIL's program and for creating support within the Institution. The following ideas are ways in which the public education effort could continue:

1. Place articles in the Torch, Research Reports, or other SI publications.

2. Develop a slide show on the causes of deterioration, options for treatment, and relative costs, and show it at department meetings or other gatherings.

3. Develop an exhibition series on preservation themes, such as "Horror of the Month".

4. Insert a section on preservation in the new branch guides; develop a preservation logo for these guides and for all posters, bookmarks, etc.

5. Include a preservation column in the SIL Newsletter.

6. Ensure that branches persistently alert custodial staff to SIL's preservation concerns.

REFER TO: Assistant Director, Collections Management (Preservation Officer)

COST: Exhibition and Slide show

TIME: FY 1988 and ongoing

H. Funding and Fund-Raising -- Recommendations

For a new program to take root, it must have financial support. This can come from both the normal budgetary process and from external benefactors. Reports from all five task forces reinforce the need for funding directed to SIL preservation objectives. The strongest possible case must be presented.

H1. Establish a replacement program budget in the SIL spending plan, using existing funds.

SIL has established a budget line in its spending plan for preservation microfilming. Once a replacement unit is established, this should be redirected to support the replacement program (a portion of which may go to preservation microfilming) and increased, if possible, to $10,000.

REFER TO: EXCON
TIME: Upon establishment of replacement program

COST: $5,000-10,000 annually
SEE ALSO: Organization, No.A2

H2. Present resource needs for preservation in every budget submission; apply for all possible internal grants (such as the Women's Committee of the Smithsonian Associates) for specific preservation projects.

For several years, SIL has included preservation in its budget request as one item for which budget increases are needed, and this should continue. Projected needs include staff, funds for contracts, equipment and supplies, and training. SIL received a grant from the Women's Committee for conservation of a photograph album in FY 1986, the first successful preservation proposal to an internal grant program in two years. SIL should continue preparing proposals for carefully defined, specific projects, as opportunities arise.

REFER TO: EXCON
TIME: FY 1988

COST: To be determined

H3. Actively seek funds from private sources.

The SI has recently decentralized fund-raising and encouraged bureaus to develop their own sources of funds from private foundations and individuals. SIL should identify and contact private and corporate foundations and begin actively to make a preservation "pitch."

REFER TO: SIL Director
TIME: FY 1987 and ongoing

COST: Staff time

I. Facilities Planning, Supplies, and Equipment -- Recommendations

The task force reports on physical condition of the collections and the environmental conditions surrounding them make abundantly clear the importance of housing the SIL collections in as good a physical environment as possible. This is not an easy task for the SIL, given the number of buildings -- and locations within buildings -- involved. In addition, the equipment used to access the collection, such as microform readers, and the supplies used for enclosures and emergencies, must be plentiful and of a quality that they will not further damage or harm the collections. As pointed out in the recommendations concerning collection maintenance, consistency and vigilence across the system are required.

There are a number of recommendations concerning equipment and supplies that can be carried out fairly easily and with good effect. These are of immediate priority. A second group of recommendations requires additional investigation or establishment of a new organizational capacity. But even more important SIL should build a capacity for close and continued interaction with all units within the Institution concerned with facilities planning, renovation, and building maintenance. SIL's voice should be heard loud and clear in all developments that affect areas where SIL collections are currently housed, or will be housed.

I1. Open lines of communication immediately with the SI Office of Design and Construction on facility planning, renovation, and plans to upgrade HVA/C systems.

The Institution is currently developing master plans for a number of SI operations. SIL should establish good lines of communication with appropriate personnel so as to learn about plans soon enough to include information on library needs. The SI is also working towards upgrading the HVA/C system in all buildings. The Task Force on Environmental Conditions identified Larry Steubing, Chief Engineer, and Forrest Andrews, Engineer, both with the Office of Plant Services, as persons willing to work with SIL on problems in Washington-based locations. Additional lines of communication are required with SAO and STRI administrators.

REFER TO: Administrative Librarian (Preservation Officer) COST: No cost
TIME: FY 1986

I2. Establish a means of periodic fumigation or pest control of all library locations.

For some branches and processing units, SIL may be able to negotiate regular pest control of its spaces as part of a general building program. For others, SIL may require its own contract. It will be necessary to survey all sites and determine the best manner of proceeding for each library location. Pests are a continual problem and must be dealt with on a regular basis, using methods that do not present hazards to human health.

REFER TO: Administrative Librarian (Preservation Officer) COST: Unknown
TIME: FY 1987

I3. Develop guidelines for facilities maintenance and establish close communication and liaison with all building managers.

The Administrative Librarian currently performs liaison activity with building managers in many capacities. The guidelines needed would cover SIL requirements for such things as temperature and humidity controls, pest control, etc.

Branch chiefs need to become individually acquainted with the managers of their respective buildings, but they also should be backed up by the central SIL administration. If a single person is charged with establishing close liaison with building managers on preservation issues, that person would provide the repository of experience and expertise to ensure that library needs were addressed consistently throughout the SIL locations. Until a preservation officer is added to the staff, that function should be assigned to the Administrative Librarian.

The proposed Emergency Action Team might also be empowered to gather data concerning needed precautionary or preventive measures that might be taken to avoid emergencies. Their findings and recommendations should be submitted to appropriate offices through SIL's authorized building managers' liaison.

REFER TO: OPCON/EXCON (Preservation Officer) COST: Minimal
TIME: FY 1987 SEE ALSO: Emergency Action Program, No. F1

I4. Publicize the availability of conservation-related supplies, such as acid-free envelopes, paper tapes for securing microform reels, twill tape for securing damaged books, etc.

The Chief Conservator and the Chief of Special Collections have developed a list of supplies that have been tested in terms of their preservation qualities, and approved for use with the collections. The supplies are ordered in economical units and stock-piled by PAO. PAO should publicize the availability of these supplies to all SIL units and issue reminders on a semi-annual basis.

REFER TO: Administrative Librarian COST: Minimal
TIME: FY 1987

I5. Determine preservation implications of all new equipment or new stocks of supplies before purchase.

Before requisitions are prepared for new pieces of equipment, such as photocopy machines, labellers, etc., or new stocks of supplies, such as book-ends, circulation slips, etc., it should be determined that they are not harmful to the collections. PAO should regularly scrutinize requisition requests and inquire if this aspect has been considered for any new orders. But the primary responsibility for determining this rests with the persons ordering the equipment or supplies, with the assistance of the Chief Conservator and the Administrative Librarian.

REFER TO: Unit chiefs and PAO COST: Minimal
TIME: Announcement in FY 1986; then ongoing

I6. Increase visibility of pull-out shelves in stack areas.

Damage to books can be decreased if users take advantage of the pull-out shelves located in stack areas to support books they are consulting on the spot. The existence of these shelves may not be noticed. A small sign or colored tape could be affixed to the edge of the shelves using words such as "Pull," or "Pull Shelf." Branches and processing units should be surveyed for a count of the shelves. Then signs or tape should be ordered and sent to appropriate locations with instructions. If this increased visibility leads to greater use, PAO should make sure that any orders for new shelving include pull-out shelves, and they should be added to other locations where needed.

REFER TO: Administrative Librarian COST: Minimal for signs
TIME: FY 1988

I7. As soon as the cleaning responsibility is clearly assigned to branch personnel, branches should be supplied with vacuum cleaners and cleaning supplies, with a stock kept of those that are consumable.

REFER TO: Unit Managers and Administrative Librarian
COST: $3,000
SEE ALSO: Collections Maintenance, No.A1

TIME: FY 1988

I8. Upgrade microform reader/printers and add units as necessary.

Since it is likely that the SIL will be increasing microform holdings substantially, all branches must move toward installing the best equipment possible. This will require replacing certain units and adding others over the next few years. The Unit Managers should prepare a survey of needs and make sure that the most important are given priority 1 status among equipment requests each year. Unit managers should consult with the Special Committee on Microforms to ensure that information on microform equipment is shared.

REFER TO: Unit Managers COST: Variable (minimum $3,000 each)
TIME: FY 1988

I9. Install timer switches in all possible stack areas.

Light is one of the most damaging elements to paper. Installing timer switches would ensure that lights would be on as infrequently as possible. To determine where it would be possible to install timer switches, a study would be required that included numbers of timers, costs, and labor implications.

REFER TO: OPCON/EXCON COST: Unknown
TIME: FY 1988 SEE ALSO: Collection Maintenance, No.A5

I10. Add a top shelf as a "cap" to all shelving possible in all branches.

Adding a shelf "cap" to all shelving would protect shelved books from water or debris falling from the ceiling. For those branches with stacks in fairly stable condition, it should not be too difficult to survey and ascertain the number required. Branches currently in a state of renovation or relocation could be deferred until final construction iscompleted.

REFER TO: Administrative Librarian (Preservation Officer) COST: Depends on availability shelving of right type
TIME: FY 1989

CONCLUSION

SIL's study team has spent eleven months preparing this study. During the task force phase another twenty-two members of the SIL became involved in the program. Their investigations have shown the precarious physical condition of the general collections. Further, they have described the tenuous control exerted over the environment in which collections are housed due to the SIL's tenant status. In looking at the past, SIL's earlier programs for preservation treatment and disaster planning have been evaluated. Finally, the options for education and preservation methods have been weighed against SI's research requirements and the Libraries' resources.

The recommendations presented here outline a strategy for dealing with the eventual deterioration of the majority of SIL collections through education, through a replacement program and through active collections maintenance. The planning process itself has begun to address these goals. For these three components of the recommended preservation program to function smoothly and become the SIL routine, the appointment of a preservation officer to implement a replacement program, to develop policies, and to coordinate maintenance activities with the branches must be an SIL priority.

APPENDIX 1

SIL Preservation Planning Program: Task Force Membership

Task Force on Organizational Responsibility for Preservation Activities

Nancy E. Gwinn, Collections Management Division, Chair
Laudine Creighton, Planning and Administration
James Lawson, Binding Purchasing
Bertha Sohn, Original Indexing
Janet Stanley, African Art
Frank Pietropaoli, NASM

Task Force on Environmental Conditions for the Collections

Lucien Rossignol, Acquisitions Services, Chair
Thomas Baker, Catalog Records
John Hyltoft, Book Conservation Laboratory
Kay Kenyon, National Zoo
Monica Knudsen, Air and Space

Task Force on Review of SIL Disaster Program

Ann Juneau, Natural History, Chair
Dorothy Brown, Book Conservation Laboratory
Nancy Matthews, Publications
James Roan, Automated Bibliographic Control

Task Force on Physical Condition of the Collections

Rhoda S. Ratner, American History, Chair
Maria Nugent, Book Conservation Laboratory, Vice Chair
Mary Kay Davies, Anthropology
Lindsey Ealy, Natural History
Estelle Hurley, Acquisitions Services
Leslie Overstreet, Natural History
Saul Schneiderman, Catalog Records

Task Force on Preservation Methods and Training Resources

Mary A. Rosenfeld, Planning and Administration, Chair
Margaret Child, Research Services
Joyce Dreyfuss, Book Conservation Laboratory
Susan Gurney, Horticulture
Angela Haggins, Environmental Research Center

APPENDIX 2

IMPLEMENTATION SCHEDULE

RECOMMENDATIONS

REFER TO:			TIME FY 87	88	89
EXCON	A1	Set up P.S. Unit	X----------		
	*A2	Set up Reformat. unit	X----------		
	A4	Reconstitute Pres. Comm.	X----------		
	A5	" Micro. Comm	X----------		
	F1	Establish EAT	X----------		
	F6	" Emerg. Fund	X-------		
	H1	Reallocate funding	X----------		
	H2	Internal Fundraising/budget	X-------		
	H3	External fundraising	X----------		
OPCON	*E1	Intercept Progream		X---	
	F5	Increase emerg. kits		X---	
	*I3	Liaison/facilities plan	X----------		
	*I9	Install timer switches		X---	
	A3	Replacement policy	X---		
	B1	Comprehen. pres. policy	X---		
	*B2	Review policies	X----------		
	B3	Bind/cat. PPP docs	X---		
	C1	Policy for Coll. Maint		X---	
	*D2	Alert/training opp.		X-------	
	*G2	Public Awareness		X-------	
ADMIN. LIB	C4	UV filters		X---	
	I1	Communicate w/ODC	X----------		
	*I2	Fumigation/pest control		X-------	
	I4	Pub. supply list	X----------		
	I6	Pull-out shelves		X-------	
	I10	Top shelf			X---
Dep. Director (w/SIL chiefs)	C2	Cleaning/bar coding	X----------		
SIL Chiefs**	C3	Maintain equipment		X-------	
	C5	Turn off lights	X----------		
	I5	Pres. implica. of equip.	X----------		
	I7	Cleaning supplies		X---	
	I8	Upgrade readers		X-------	

APPENDIX 2 (CON'T)

IMPLEMENTATION SCHEDULE

RECOMMENDATIONS

REFER TO:			TIME 87 88 89
Personnel Comm.	*D1	Orientation/staff training	X--------
Pres. Comm. (w/SIL Chiefs)	*G1	Education of users/posters,	X--------
EAT	*F2	Finalize LEAP	X---
	*F3	Salvage instructions, etc.	X---
Chief Conserv.	F4	Train EAT	X----------

*Items marked with an asterisk are activities in which the proposed preservation officear might be directly involved.

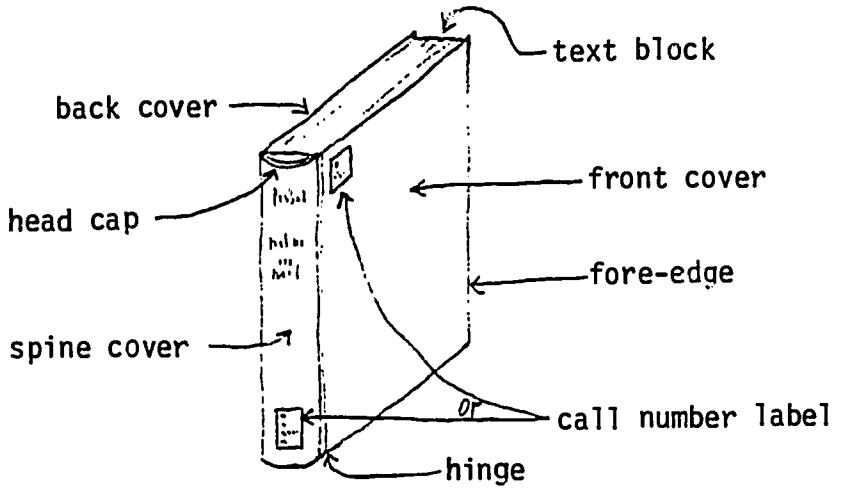
**Many other recommendations will, of course, involve the SIL chiefs in both planning and implementation.

6012G/MAR/4-17-86

SIL COLLECTION SURVEY - DEFINITIONS

General:

leaf - a single sheet of paper; a page.
signature - several leaves folded and sewn in as a group, the book being made up of numerous such signatures.
verso - the back side of a leaf.



Location - the abbreviation or acronym of the library, at the end of the call number. Many books in the Central Reference and Natural History collections lack a location abbreviation - list these as SI and NH, respectively.

Call # - record completely, as written on the spine and/or title page (Dewey numbers are usually written on the page after the title page). Include the lower-case "q" and "f", if any, but omit volume and copy number. In writing the number out in a line, insert a decimal point before the cutter line for Dewey and LC numbers; leave a space before any lines following the cutter. Do not repeat the location abbreviation. Examples:

506.573 N28 SI	= 506.573.N28	qQL 673 p2R71 1983X	=qQL673.P2R71	1983X

Date of publ. - the year, from the title page or verso. If more than one is listed, write down the most recent. If it's in Roman numerals, write it down exactly as is. If there is no date, use the next book on the shelf.

Place of publ. - the city, from the title page or verso. Use publisher information, not printer, distributor, etc. If there is no information, use the next book on the shelf.

Shelved: (* = correct this after noting it on survey form)

* leaning - the book is leaning at significant angle (20% + off the vertical).

dusty - visible or touchable dust, grit, etc. on booktops or shelf surface. Blow, do not rub, it off.

flat - the book is lying flat on its back, either on folio shelving or on top of other, upright books on a regular shelf.

on spine - the book is standing on its spine.

* on fore-edge - the book is standing on the front edges of the cover.

Cover: the outside of the book

vellum - a kind of leather, extremely smooth, usually creamy white (often over boards).

leather - treated (tanned, tawed, etc.) animal skin of any kind, usually brown or reddish-brown (often over boards).

cloth - a woven fabric of any kind (over boards).

buckram - a coarse fabric coated to form a thick, hard exterior surface (over boards); the standard material used by commercial library binders.

plastic - a smooth, impermeable, synthetic material (often over boards).

boards - thick cardboard, whether plain or covered with paper. Check off this category only when the boards are not covered with any of the non-paper materials above.

paper - limp paper covers with no boards; i.e., paperback books.

jacket - detached paper cover enfolding the regular cover.

Casing: additional external protection

original portfolio - any kind of container holding loose sheets or signatures, that was part of the original publication. Note materials and condition in Comments.

slip case - box (usually cardboard) encasing a bound book and open on one end to show the book's spine, that was part of the original publication.

archival pack - a box (designed to look like a library-bound book) with buckram covers and an interior case of over-folding, acid-free cardboard.

Hollinger box - a gray, folding cardboard box, usually quite large, with over-lapping fore-edge sides.

other box - any kind of box not listed above.

pamphlet boards - thick cardboard, usually gray or speckled, with a cloth or tape "spine," holding slim paperback materials. Note method or interior attachment in Comments.

envelope - paper envelope of any kind. Mark "acid-free" only if it is so identified (ph number printed on the envelope) or is new and white.

Paper: the inside of the book

book/matte - regular book paper, slightly rough with no sheen.
photo-dup. - standard paper, smooth, used in photocopying.
glossy - extremely smooth, shiny paper,
newsprint - thin, porous paper like that used in newspapers.
plates - pages containing illustrations, maps, etc., that may be interspersed in the text block or may form an entire volume of their own, but that contain no text themselves (aside from a caption).
tissue guards - very thin sheets of tissue paper placed between an illustration and the facing page of text.
fold-outs - any bound-in paper materials that fold out.
edges un-cut - pages still connected from being folded into signatures, usually along the top edge.
microform - thin plastic cards or translucent sheets, designed to be used on an enlarging viewer.
slides - small transparencies held between frames.
phono/disc - any kind of recorded material, usually a thin, flexible plastic circle.

Binding: the primary method of attachment between the inside and outside of the book

fold-sewn - the text block is sewn together through the central folds of the signatures. You can see the threads running vertically in the folds.
over-sewn - the text block is sewn together from front to back through the inner edges of pages. You can see the thread as it goes horizontally through holes in the gutter margin.
glued - whether pages are singles or in signatures, the text block is formed by glueing the inner edges of the paper to a spine strip.
stapled - the pages are attached to each other by staples, either through the central signature folds (like fold-sewing) or from front to back through the inner edges of the pages (like over-sewing), or in other ways.
loose-leaf - the pages are not attached to a spine or to each other. They may be completely loose in a portfolio, attached to a ring binder, etc.
gutter margin - the inner margin of a page between the text and the binding/spine/edge.

Acidic test - Make a dot with the acid pen in an inconspicuous spot near the middle of the page in the middle of the book (AVOID DOING THIS ON PLATES. IF THE BOOK CONSISTS ENTIRELY OF PLATES, CHOOSE AN INCONSPICUOUS SPOT ON THE BACK OF THE PAGE). The dot will become one of three colors: Blue signifies that the paper is acid free; green indicates some acidity in the paper; and yellow shows high acidity. If the dot turns green or yellow, check off the appropriate line; if it turns blue, leave this blank. DO NOT DO THIS TO PRE-1800 MATERIALS. For these, check off "test not done."

Brittle test - IN THE MARGIN AREA ONLY, bend but do not crease the upper corner of a page in the middle of the book, backward and forward up to 4 folds. Once backward + once forward = 1 fold. Write down how many times it would bend before breaking off. If it breaks before 1 complete fold, write down "1"; if it does not break off by 4 complete folds, leave the line blank.
DO NOT DO THIS TO PRE-1800 MATERIALS OR TO ANY ILLUSTRATIONS. For these, check off "test not done."

Problems: (alphabetical, cover & paper & binding problems combined).

damaged - the spine is torn in any way (check the head cap especially).

detached - present but no longer actually attached. Pull the book for attention.

foxed - brownish speckling on paper.

insect damage - small holes, tunnels, etc. through the cover or text block; bite marks.

insect presence - visible insect bodies or body parts in the book or on the shelf.

loose - still attached but only loosely (e.g., the sewing is coming undone and the signatures can be pulled away slightly from the spine; the cover hinges are cracking/tearing so that the front or back cover wobbles away from the rest).

marked - pen or pencil marks in the text (e.g., annotations, underlines, etc.). Note extensive annotations in Comments.

missing - not present with the book on the shelf.

mold/mildew - fuzzy or speckling stain or growth, usually gray/green/brown, often with a musty smell. Pull the book for the librarian's attention.

red rot - dry, crumbling leather that usually leaves a dusty red or brown smear on your hand.

rusty - red/brown stains from staples, paper clips, etc.

scratched - lines, marks, etc. breaking the surface of the cover material.

stained - discoloration (from water, grease, blood, whatever) whether a solid blotch or merely a residual outline.

stuck - pages stuck together within the text block. Do not try to separate the pages.

torn - whether a partial tear or a complete tear resulting in the loss or separation of part of the page or cover. Not any loss of text in Comments.

warped/mis-shapen - no longer flat with squared (right-angle) corners; bent, bowed

yellowing - internal discoloration of paper, where it's turning yellow or brown.

Alien materials: (* remove these GENTLY from the book after noting them on the survey form.)

'sive tape - any kind of tape which sticks to a surface, used to repair tears, etc.

* clips - metal or plastic paper clips, whether attached to pages or loose inside.

* paper slips - any kind of extraneous paper, usually inserted as a bookmark.

paper additions - informative material (book jackets, newspaper or magazine articles, etc.) loose inside the book. (If the material is bound or tipped in with the text, consider it part of the text and not alien or suppl. material.)

RB slip - a heavy, acid-free paper slip containing a typed RB SI call number.

SIL COLLECTION SURVEY

Location_____ Shelved (check only if applicable): Team_____

Call #_____ leaning _____ Date_____

dusty _____

Date of publication_____ flat _____

on spine_____ Brittle test:____folds

Place of publ._____ on fore-edge_____ (Test not done _____)

==========

External / cover

Check any/all applicable:

Cover:
- vellum_____
- leather_____
- cloth_____
- buckram_____
- boards_____
- plastic ___
- paper_____

Jacket on?___

Added casing:
- orig. portfolio___
- slip case _____
- archival pack_____
- Hollinger box_____
- other box _____
- pamphlet boards___
- envelope:
  - acid-free_____
  - other_____

Check only if applicable:

Cover, general:
- scratched_____
- stained_____
- red rot_____
- warped/ mis-shapen____
- mold/mildew growth_____
- adh. tape_____

Front/back covers:
- loose _____
- torn _____
- detached _____
- missing _____

Spine cover:
- damaged _____
- detached _____
- missing _____

==========

Internal / paper & binding

Check any/all applicable:

Paper:
- book/matte____
- photo-dup_____
- glossy _____
- newsprint ____

Plates _____
Tissue guards___
Fold-outs _____

Edges un-cut____

Suppl.material:
- paper_____
- microform_____
- slides_____
- phono/disc____

Binding:
- fold-sewn_____
- over-sewn_____
- glued _____
- stapled _____
- loose-leaf ____

Gutter margin less than 1 inch _____

Acidic: green____
yellow___
Test not done____

Check only if applicable:

Leaves:
- loose _____
- torn _____
- detached ____
- missing _____
- stuck _____

yellowing____
foxed _____
stained _____
marked _____
rusty _____

mold/mildew_____
insect damage _____
insect presence _____

Alien materials:
- adhes. tape _____
- clips _____
- paper slips _____
- paper additions ____
- RB slip _____
- other _____
  _____

==========

Comments:

APPENDIX 4

PROBLEMS - TOTAL SAMPLE and BY LOCATION

	Total (N=1088) #	%	Location NMAH (N=256)	NMAH-P (N=329)	BAE (N=173)	NASM (N=170)	SOA (N=130)
Shelving							
dusty	393	36.1%	43.7%	51.3%	57.8%	1.0%	5.0%
leaning	70	6.4	1.6	5.8	18.5	4.7	4.6
flat	15	1.4	.4	2.1	0	0	0
on spine	4	.4	0	.3	0	0	2.3
on fore-edge	10	.9	1.2	.3	1.7	0	2.3
Covers, general (any below)	289	26.6%	20.7%	37.0%	36.4%	14.7%	10.0%
scratched	52	4.8	4.6	6.6	5.2	2.9	2.3
stained	141	13.0	11.7	23.1	8.6	4.1	4.6
red rot	72	6.6	3.5	9.1	15.6	.5	0
warped	99	9.1	7.8	7.9	16.7	9.4	4.6
mold/mildew	2	.2	.3	0	0	0	0
adhesive tape	10	.9	0	2.4	0	1.1	0
Front/back covers (any below)	126	11.6%	7.4%	12.1%	25.4%	7.0%	4.6%
loose	74	6.8	4.3	6.0	17.3	3.5	3.0
torn	34	3.1	1.9	4.2	4.0	2.9	1.5
detached	31	2.8	1.1	3.0	7.5	1.1	1.5
missing	7	.6	.7	.9	1.1	0	0
Spine covers (any below)	208	19.1%	20.7%	16.1%	38.1%	11.1%	6.9%
damaged	195	17.9	20.7	14.8	34.1	10.0	6.9
detached	9	.8	1.1	.6	.5	1.7	0
missing	10	.9	0	.9	3.4	.5	0
Any cover damage ↑	399	36.7%	32.4%	45.9%	52.6%	24.1%	13.8%
Paper (any below)	578	53.1%	50.0%	64.4%	58.3%	51.1%	24.6%
yellowed	518	47.6	43.7	57.1	52.6	48.2	21.5
foxed	53	4.9	7.4	5.7	4.6	1.1	.7
stained	139	12.8	17.1	15.5	11.5	8.8	1.5
marked	36	3.3	3.1	4.2	2.3	3.5	3.0
rusty	5	.5	1.1	.3	.5	0	0
mold/mildew	0	0	0	0	0	0	0
ins. damage	1	.1	.3	0	0	0	0
ins. presence	7	.6	.7	.6	.5	.5	.7
Acidity (any)	906	83.2%	82.8%	84.2%	89.6%	78.2%	79.2%
mild	157	14.4	17.2	14.3	6.4	18.2	15.4
extreme	749	68.8	65.6	69.9	85.2	60.0	63.8
test not done	0	0	0	0	0	0	0
Brittle (total)	321	30.4%	27.7%	36.0%	50.8%	17.2%	7.0%
1 fold	177	16.3	16.0	17.9	32.9	6.5	2.3
2 folds	63	5.8	5.1	6.4	10.4	1.8	.8
3 folds	56	5.1	4.3	5.8	5.2	6.5	3.1
4 folds	35	3.2	2.3	5.6	2.3	2.4	.8
test not done	2	.2	0	.3	0	0	0
Binding (any below)	169	15.5%	12.1%	19.4%	21.3%	10.5%	7.6%
loose	66	6.1	6.6	4.2	12.1	2.9	3.0
torn *	97	8.9	5.8	14.8	6.9	6.4	3.8
detached	29	2.7	2.3	2.7	4.0	1.1	.7
missing	0	0	0	0	0	0	0
stuck together *	28	2.6	1.1	4.2	2.3	2.3	1.5

* These refer to paper, not to binding.

APPENDIX 5

WALK THROUGH - ENVIRONMENTAL CONDITIONS TASK FORCE

LOCATION : _____

DATE COMPLETED : _____ BY : _____

1. Approximate size of library (sq.ft.). _____

2. Size of collection (approx. # of volumes). _____

3. Approximate no. of : bound journals _____

: unbound journals _____

: slides (if any) _____

: microfilm (reels) _____

: microfiche _____

: phonograph records _____

: audio casettes _____

: video casettes _____

: other (spec.)_____ _____

4. Average number of users per month. _____

5. Do you have windows? Yes ___ No ___

6. If yes, how many? _____

7. Do you have fluorescent lights? Yes ___ No ___

8. If yes, where are they located (ex. ceiling, walls etc.)

_____

9. Do you have ultraviolet filters on windows? Yes ___ No ___

10. Have you noticed evidence of fading, discoloration on book bindings? Yes ___ No ___

11. If yes, please describe. _____

_____

12. What is the cleaning schedule at your location?
once a day ___? once a week ___? once a month ___? never ___? other ___?

13. Have you noticed evidence of vermin? Yes ___ No ___

14. Is there an established schedule for pest control (extermination)? Yes ___ No ___

15. Are there any special problems with regard to housekeeping at your location? Yes ___ No ___

16. If yes, please explain. _____

_____

_____

HEATING VENTILATION AND A/C (HV&A/C)

17. System (ex. oil, steam, etc.). _____

18. Type (ex. radiators, forced air, etc.). _____

19. Is this system effective? Yes ___ No ___

20. Have you experienced problems with HV&A/C? Yes ___ No ___

21. If yes, please explain. _____

_____

_____

22. Are there existing temperature records for your location? Yes ___ No ___

23. Approximate distance (ft.) from the following to library materials :

radiators _____

heating pipes _____

incandescent lights _____

24. Have you noticed evidence of warping, splitting, or cracking of library materials? Yes ___ No ___

25. Number of humidifiers at your location? _____

26. Number of dehumidifiers at your location? _____

27. Proximity (ft.) of water pipes to library collections? _____

28. Proximity (ft.) of forced air vents to library collections? _____

29. Leaks from radiators or pipes? Yes ___ No ___

30. Signs of dryness? Yes ___ No ___

31. " " condensation? Yes ___ No ___

32. Existing relative humidity records? Yes ___ No ___

SHELVING

33. Are book shelves and cabinets appropriate to the size of materials? Yes ___ No ___

34. Are book shelves and cabinets free of rust, splinters, or sharp edges? Yes ___ No ___

35. Are shelf heights or cabinet drawers convenient for careful removal and replacement of materials? Yes ___ No ___

36. Is there a sufficient number of step stools for safe access to high shelves? Yes ___ No ___

37. Do book ends adequately support books? Yes ___ No ___

38. Are shelves or cabinets overcrowded? Yes ___ No ___

39. Are materials on book shelves standing upright? Yes ___ No ___

40. Are materials in cabinets stored flat? Yes ___ No ___

41. Is there adequate aisle space for book trucks? Yes ___ No ___

FOLDERS AND BOXES

42. Do folders and boxes provide adequate suppport for materials? Yes ___ No ___

43. Are they of appropriate size? Yes ___ No ___

44. Are boxes and folders in good condition? Yes ___ No ___

45. Is there evidence of embrittlement or staining transferred to contents? Yes ___ No ___

EXHIBIT CASES

46. Are exhibit cases sturdy and do they have smooth surfaces? Yes ___ No ___

47. Are exhibit cases illuminated? Yes ___ No ___

48. If yes, how are cases illuminated (fluorescent, track, spotlight, incandescent, etc.)?

_____

_____

49. Is there control of internal temperature and relative humidity? Yes ___ No ___

50. Is there ultraviolet filtering? Yes ___ No ___

51. Do display stands in cases adequately support objects? Yes ___ No ___

52. How long are materials usually displayed in cases? _____

BOOK TRUCKS

53. How many book trucks does your branch own? _____

54. Is this a sufficient number for the careful handling of books without jamming or overloading? Yes ___ No ___

55. How many books trucks are in sturdy condition and smooth rolling? _____

56. Are book trucks free of rust, splinters and sharp edges? Yes ___ No ___

57. Are book trucks wide enough for materials, i.e. have at least one flat shelf? Yes ___ No ___

58. How many have lipped or sloped shelves to hold books over rough floors? _____

WORK SURFACES

59. How many work surfaces or reading tables are in your location? _____

60. Are sizes adequate for examining materials? Yes ___ No ___

61. Are locations convenient for careful handling of materials? Yes ___ No ___

62. Are arrangements convenient for careful handling of materials? Yes ___ No ___

63. Are work surfaces and reading tables free of rust, splinters and sharp edges? Yes ___ No ___

EQUIPMENT

64. How many of the following pieces of equipment do you have in your location :

	#	approx. age	maintenance/service contracts Y/N
Microfilm reader	_____	_____	_____
Microfiche reader	_____	_____	_____
Microfilm/fiche reader	_____	_____	_____
Phonograph	_____	_____	_____
Audio casette player	_____	_____	_____
Video casette player	_____	_____	_____

65. If you have any special problems due to location of collection with regard to nature of adjoining spaces, use patterns, age of building or seasonal changes, please comment.

_____

_____

_____

_____

(preserv.que, lrr, 11/21/85)

APPENDIX 6

TEMPERATURE AND RELATIVE HUMIDITY READINGS

Environmental Conditions Task Force

Hygrothermograph readings were taken from a number of SIL locations over the period of November 1 through December 14, 1985. In addition to the results gathered from the selected survey sites, staff of the SIL Book Conservation Laboratory have been maintaining temperature and relative humidity records for most SIL locations for several years. These records were incorporated into the body of data collected by the task force. The examples which follow were selected because they demonstrate variations in temperature and/or relative humidity.

At the top of each chart is a time line running left to right, indicating the period of time during which readings were taken. A vertical scale, appearing every three inches, indicates a possible temperature range of 0°F - 110°F (upper two thirds of each chart) and a possible relative humidity range of 0% - 100% (lower third of each chart).

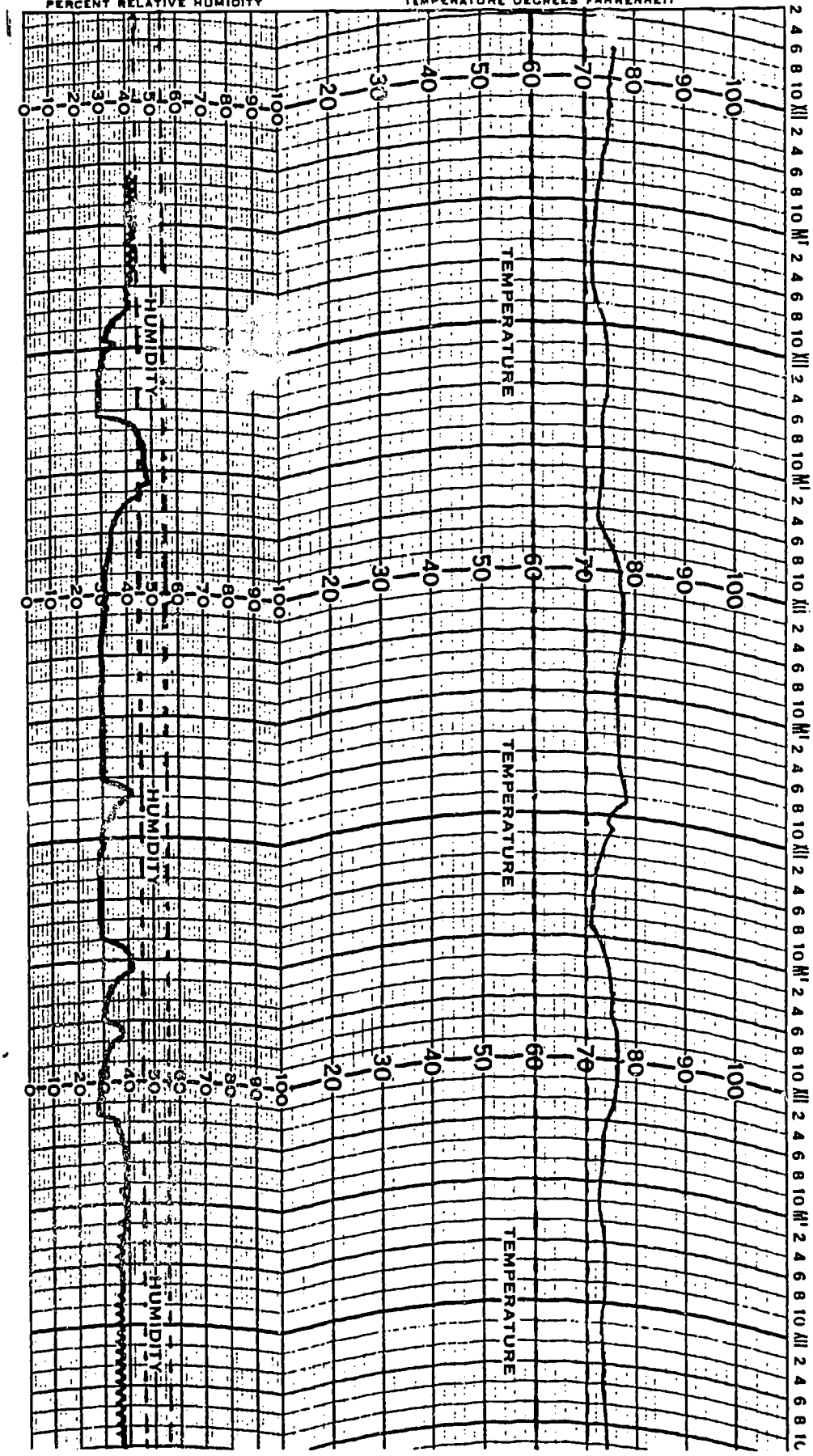
Bearing in mind that people and books must usually coexist within the same environment, the optimum temperature range for library materials is 65°F. ±5°. The extremes of this optimum range are indicated by two dashed lines. The solid line running between the dashed lines indicates the actual temperature readings over time. An instance of the solid line crossing either of the dashed lines indicates an unacceptable temperature reading. Relative humidity, with an optimum range of 50% ±5%, is similarly indicated.

PRINTED IN U.S.A.

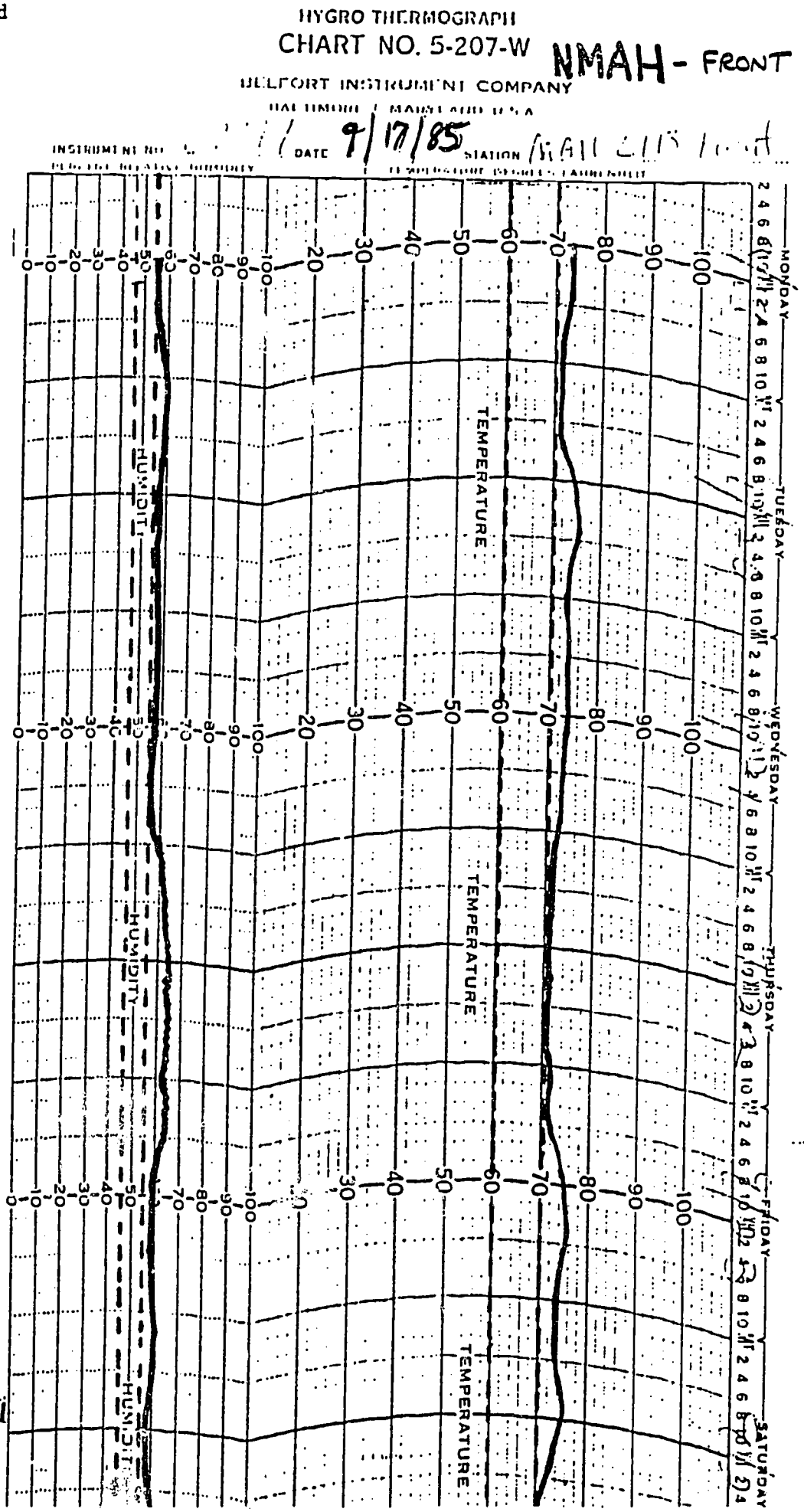
HYGRO-THERMOGRAPH
CHART NO. 5-207-W NASM

BELFORT INSTRUMENT COMPANY
BALTIMORE MARYLAND, U.S.A.

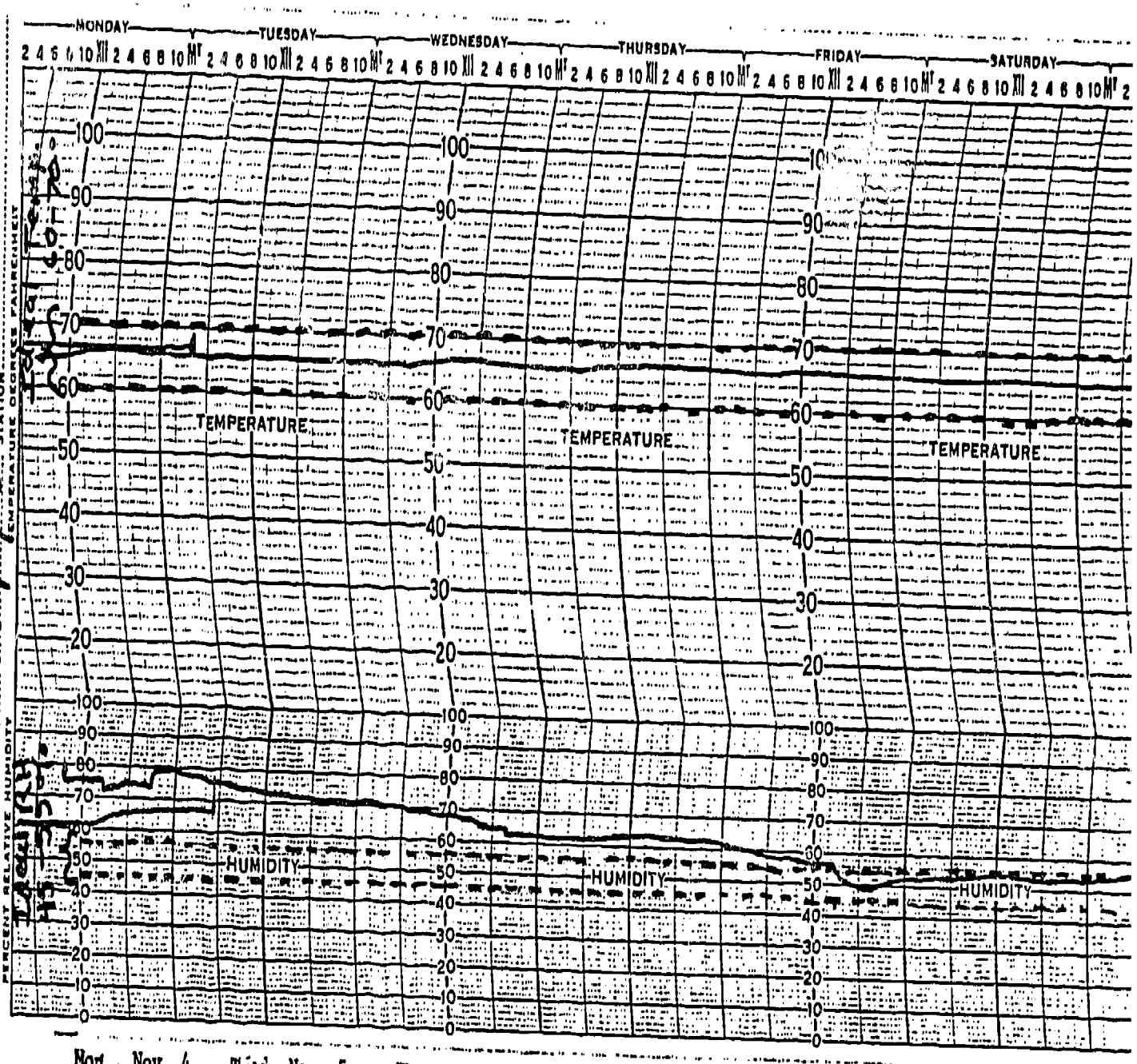
INSTRUMENT NO. ..... DATE 12-2-85 STATION South Dakota



Appendix 6, continued

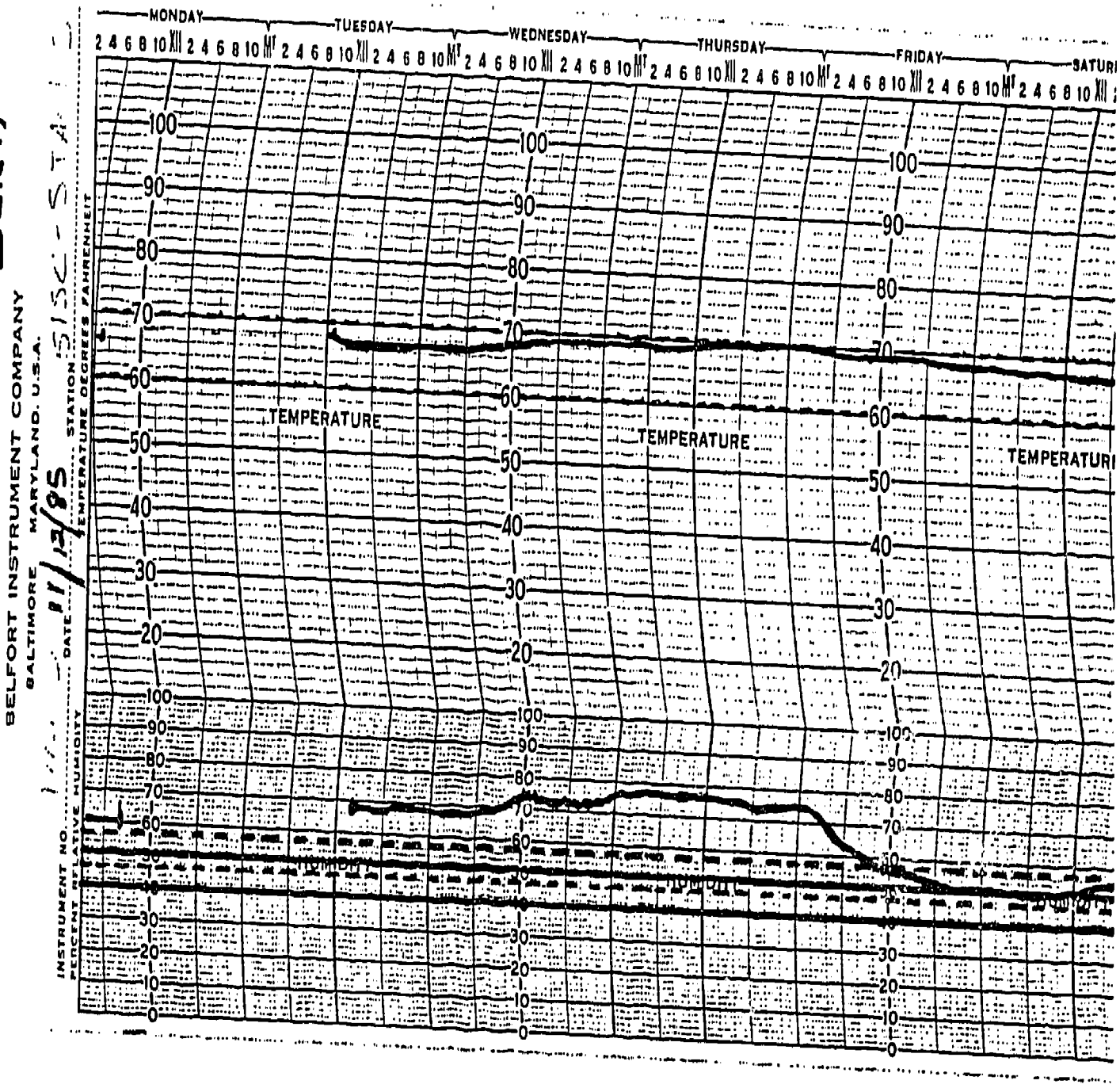


BEST COPY AVAILABLE



Appendix 6, continued

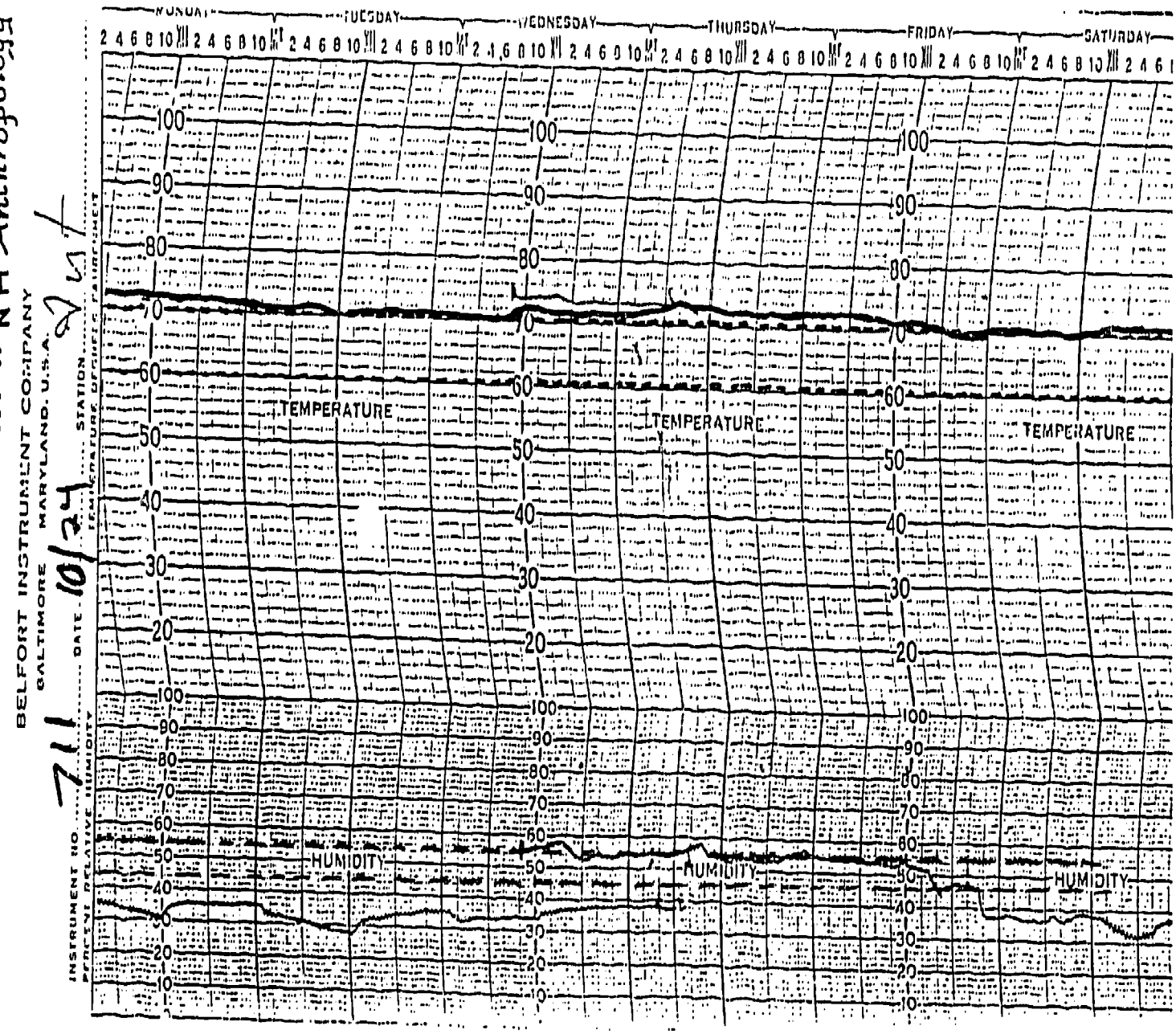
Date	Mon., Nov. 4	Tues. Nov. 5	Wed., Nov. 6	Thurs Nov. 7	Fri. Nov. 8	Sat. Nov. 9	Sun. Nov. 10
Temp. High	57°	64°	61°	61°	64°	59°	67°
Temp. Low	53°	56°	52°	53°	43°	44°	41°
R.H. High	97%	97%	90%	90%	96%	63%	82%
R.H. Low	83%	78%	83%	56%	54%	27%	27%
Weather	Heavy rain	Cloudy, show.	Ptly. Cloudy	Sunny	Sunny	Sunny	Sunny



Appendix 6, continued

-5-

Appendix 6, continued

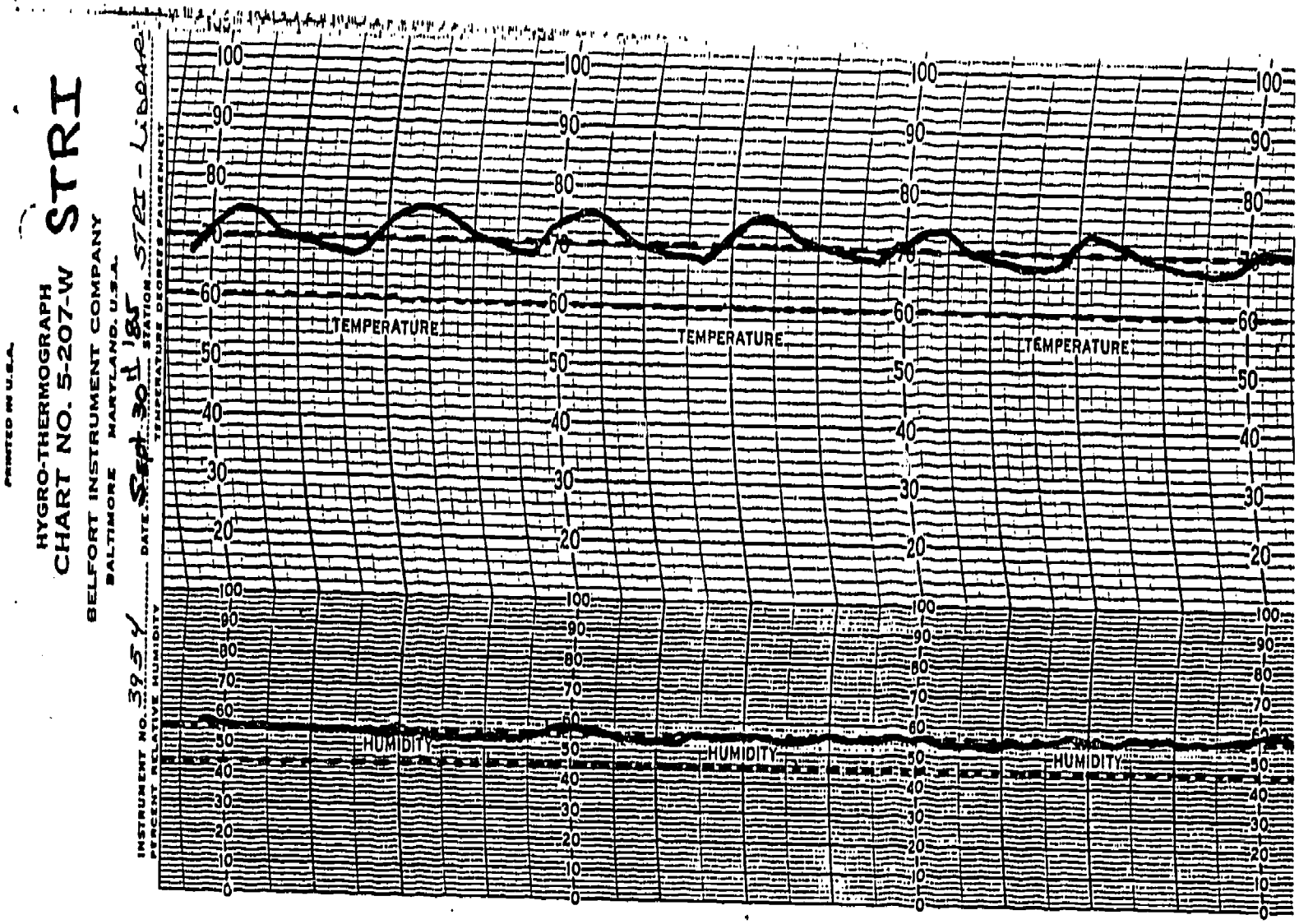


Appendix 6, continued

-7-

78

79

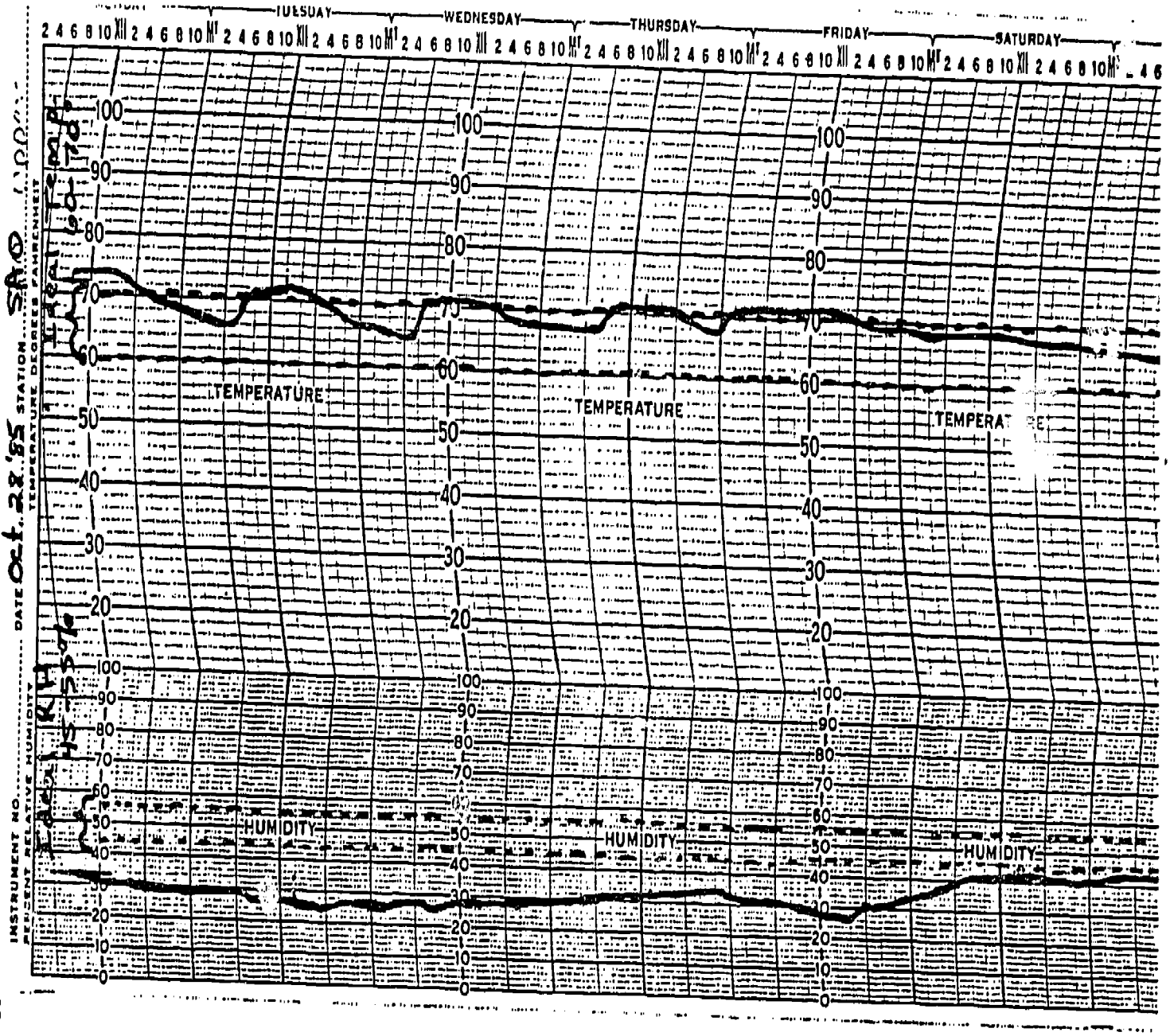


Appendix 6, continued

37

80

81



DATE

Appendix 6, continued

Temp. High

Temp. Low

R.H. High

R.H. Low

Weather

APPENDIX 7

LIGHT READINGS

11/1/85 - 12/14/85

ENVIRONMENTAL CONDITIONS TASK FORCE

Both artificial and natural light sources will affect ultraviolet light levels which in turn cause fading and accelerate the deterioration of acidic papers. As a result, total darkness is the ideal for storage of printed materials. This being highly impractical in almost all situations, the generally accepted standard for storage of library materials is 75 watts lumen (a measure of ultraviolet radiation).

Light readings were taken with the use of a hand-held UV meter at seven SIL sites and from at least two locations at each site. The results of these readings are as follows :

Hall 22. . . . . .fluorescent lights = 40-50
. . . . . .Incandescent lights = 50

Botany Library . . . . . .Windows = 400
. . . . . .fluorescent lights = 100

Anthropology Library-Room # 1
. . . . . .Unblinded window/reading area = 250
. . . . . .Blinded window/shelves = 60-65
. . . . . .Stacks at far wall = 25-30
Room # 2
. . . . . .Incandescent light/work area = 80
. . . . . .Stacks fluorescent reflected = 125-130
. . . . . .Long hall fluorescent light = 70-75

NASM Library . . . . . .Stacks, fluorescent lights = 100
. . . . . .Near windows = 100
. . . . . .Card cat., incandescent lights = 50

NZP Library. . . . . .Mid. reading rm., fluorescent = 100
. . . . . .Near windows = 100
. . . . . .Stacks, fluorescent = 100

SERC-Rockville . . . . . .Librarian's desk, fluorescent = 30
. . . . . .Stacks, fluorescent = 75
. . . . . .New periodicals sec., fluorescent = 50
. . . . . .Window = 40

NMAH . . . . . .Circ. desk, fluoresc.& incand. = 90
. . . . . .Stacks, fluorescent = 100
. . . . . .Reading room, fluoresc. & incand. = 110
. . . . . .Librarian's office, fluorescent = 50
. . . . . .Pit, fluorescent = 100

APPENDIX 8

PRESERVATION SERVICES OFFICER

This position is located within the Collections Management Division of the Smithsonian Institution Libraries (SIL) and reports to the Assistant Director for Collections Management. The Collections Management Division is responsible for the selection, preservation, and deaccession of the collections housed in all SIL branches

The Chief, Preservation Services is responsible for the establishment and development of a Preservation Services office to handle preservation of the general collections. The SIL has a Book Conservation Laboratory to handle restoration of Special Collections. The term preservation is defined in the broad sense and includes maintenance of material in original formats or to replace or reformat deteriorating materials.

DUTIES

Develops or coordinates the development of policies, standards, systems, and procedures to serve as guidelines in all aspects of the SIL preservation program. Coordinating closely, as appropriate, with the Acquisitions chief, the Book Conservator, branch chiefs, and chiefs of other SIL units, designs and administers a system for identifying and screening deteriorating materials from the general collections and establishes criteria for selecting appropriate preservation options such as repair, commercial binding and rebinding, replacement, reformatting, or withdrawal. Develops appropriate training programs to guide selectors on deciding among preservation options. Oversees the gathering of relevant bibliographic and publishing information to aid in decisions, establishes costs of options, and ensures that the treatment selected is most appropriate for the value and use of materials.

Establishes and administers a preservation microfilming program, coordinating with appropriate SIL chiefs in selecting material to be preserved and supervising staff performing the various step required to process material. Supervises the Binding Purchasing Unit.

Negotiates with binders, filming agencies, and other commercial services for contract preservation services. As needed, develops statements of work and establishes guidelines and standards. Monitors quality of services received to ensure compliance with contracts.

Monitors the preservation budget and allocates funds among the preservation functions in a way that best serves the preservation needs of SIL collections.

APPENDIX 9

Draft Introduction to an SIL Preservation Policy

Introduction

The collections of the Smithsonian Institution Libraries have been growing for over 100 years and now number nearly 1 million volumes. While some research programs of the Smithsonian depend primarily on current information, the bulk of the bureaus supported by the SIL are engaged in historical research and depend heavily on research materials that provide a contemporary context for objects, speciments, and events. Some of these volumes have become rare and valuable; others will have continuing local importance to Smithsonian programs far into the future. In recognition of this, the SIL has for some years engaged in a number of activities designed to allow library materials to be available for current use, yet preserved for the future. These include a commercial binding program, the establishment of a Book Conservation Laboratory to deacidify and restore important volumes and the establishment of climate-controlled special collections facilities. In 1985-86, the SIL conducted a Preservation Planning Program to review its current level of preservation activity and to make recommendations for changes and/or enhancements. This policy is a result of the effort and articulates the preservation responsibility of the SIL.

POLICY

As the library support unit of a major research institution, the S.I. Libraries regards preservation of all library materials as a major program responsibility. The Libraries strives to provide a comprehensive preservation program consistent with the needs of Smithsonian research programs. This requires evaluating the amount of use of individual items or segments of the collections, the need to maintain a specific format, the physical condition of the item or collection, and the cost of preservation treatment.

I. Principles

The practices of the Libraries are based on the following principles:

A. Each item or category of materials considered for preservation will be examined carefully with regard to research value, ethical (i.e. ethics of conservation treatment), aesthetic, and economic considerations, and the most appropriate preservation alternative chosen.

B. A distinction is made between ephemeral items, rare or unique materials, and materials of permanent research value; this distinction forms the basis for decisions concerning retention of the original format versus preservation of the intellectual content.

C. Special consideration will be given to the exhibition potential of volumes that relate to the Smithsonian's object collections.

D. Selection of the most suitable treatment is a decision initiated by the selector, who is in the best position to know the item's value to the collection and intended use, based on the advice of the preservation officer, who is responsible for choosing the best combination of methods and materials.

E. Decisions to treat individual items or whole collections will be made jointly by the preservation officer and the selector responsible for the material, with input from the chief conservator and SI curators as required.

F. Hard/copy is the chosen replacement when an item is still in/print or has been reprinted or newly/edited and the latter is in better condition. When hard/copy is unavailable then an item will be replaced with a microformat.

G. All materials used for the physical treatment of library materials meet national standards.

H. No treatment is given to a rare or unique item that can not be reversed.

I. Once an item has been evaluated and a preservation decision has been made, the Libraries will not retain brittle or damaged materials except in extraordinary circumstances.

II. Program Priorities

SIL gives primary emphasis to those activities designed to have the most significant and immediate impact on the condition of the collection, as a whole, balanced with activities geared toward increasing the longevity of individual items in the collection. The following are program priorities:

A. Control of the environment, including temperature and humidity control, air conditioning and filtration, and protection against the effects of ultraviolet light. Since SIL collections are distributed in a variety of buildings, SIL can exercise only a limited amount of initiative in these matters.

B. Collections maintenance, including circulation policies, handling and use practices, shelving, stack cleaning, routine repairs.

C. Commercial binding of current serials, binding and rebinding of paperbacks and other monographs, protective enclosure.

D. Replacement/reformatting of brittle or seriously damaged items, including proper housing and storage of microforms.

E. Conservation, restoration of special collections and books scheduled for exhibition.

It will be necessary to develop new policies or combine/revise existing policies for this comprehensive policy.

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APPENDIX 10

S.I.L. POLICIES RELATING TO PRESERVATION (0141P;p.8)

POLICY #/DATE	TITLE	SUMMARY	COMMENT
80-03 June 25, 1982	Loan of SIL material for exhibition in other institutions	Prescribes conditions for lending; outlines procedures for care in handling, emphasizing insurance and security measures.	In process of revision. This version covers conservation fairly well. New draft should be reviewed for conservation aspects.
81-20 April 21, 1981	Special collections processing transmittal form	All materials submitted to the special collections cataloguer are accompanied by transmittal slips.	Facilitates communication among selectors, special collections cataloguer and conservator.
81-22 May 5, 1981	Security measures and Procedures. Part I: Dibner Library	States directives for proper handling of rare books in the Dibner.	Adequate for use of Dibner. Could be expended to cover other SC facilities.
81-31 June 30, 1981	Priorities in conservation of printed materials	Details priorities of activities at the Book Conservation Laboratory. Decisions for preservation are made on an individual basis, with recommendations from chief of special collections and/or collection manager.	Title suggests broader application than articulated. Master policy should set priorities for all preservation work. This covers rare items only.
81-51 Sept. 29, 1981	Binding of newly catalogued books	Provides for the automatic binding of new paperbacks and of newly catalogued material needing binding, thereby eliminating the binding decision shelf.	This policy is clear and comprehensive as written.
81-60 Feb. 1, 1982	Use of special collections in SIL	Sets guidelines which allow or preclude use of rare materials.	This policy is clear as written. A policy which sets care and handling guidelines for the general collection is needed.
82-30 June 22, 1982	SIL Collection Development policy.	Section VI covers care and and control of collections.	This section should become part of the master preservation policy and be expanded. This policy should cover development issues only.
82-36 Jan. 10, 1983	Marking rare books, manuscripts and other special collections material	Sets procedures for ways in which special collections material is to be marked for SIL ownership.	Policy should be expanded to set procedures for the general collection.

83-17 Sept. 29, 1983	Illustrative materials removed from withdrawn volumes.	Procedures are listed for requesting and handling illustrative matter from reformatted paper volumes.	Policy clear. Has never been implemented. Need to be reviewed and incorporated as part of general reformatting policy.
84-05 March 16, 1984	Microfilms of SIL materials	Sets standards and outlines procedures for preservation microfilming and copying of microfilms in SIL collections.	Does not includes selection or storage guidelines. Should be expanded to include other reformatting options. Covers microfilming procedures well.
84-10 March 16, 1984	Photocopying special collections materials	Care, handling, type and method of photocopying of materials is discussed in detail.	Emphasis is properly placed on evaluating the physical condition of the book before allowing copying. Needs to be expanded to include the general collection.
84-15 Sept. 13, 1984	Assignment of materials to the special collections	Section 3E: Criteria for Selection contains references to preservation condition as a criteria.	Adequate.
84-16 Nov. 7, 1984	Reporting missing items - special collections	A detailed explanation of methodology for reporting missing volumes. A sample form is included.	Security of special collection volumes is discussed in detail. Need a policy for the general collection.
84-19 Sept., 27, 1984	Circulation policy of the S. I. Libraries	Section 3B details procedures required in handling circulation of rare materials and special collections. Removal from site is usually not permitted Photocopying may only be done with permission and under supervision. Charge slips must besigned - even for on-site tions. Section 6 covers replace-consultament for damage or loss.	Circulation policies seem adequate regarding preservation at this time. Should be reviewed after circulation system in place.
85-08 August 9, 1985	Transportation of special collections materials	Sets policy for delivery, pick-up, storage, packing, and record-keeping when it is necessary to move special collections materials from an S.I. building.	Contains significant policy decisions affecting preservation. It seems up-to-date on security and preservation. Could be expanded to include packing and handling of the general collections which does not appear in any policy..